



## Inorganics Case Narrative

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### Colorado Oil & Gas Conservation Commission TBAL

Work Order Number: 1309217

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS on 09/17/13.
3. The sample was prepared for analysis based on Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures and Environmental Monitoring Systems Laboratory (EMSL) Rev 2.1 procedures.
4. The sample was analyzed following MCAWW and EMSL procedures for the current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	310.1	1106
Bicarbonate	310.1	1106
Carbonate	310.1	1106
pH	150.1	1126
Specific conductance	120.1	1128
TDS	160.1	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

5. All standards and solutions were used within their recommended shelf life.
6. The sample was prepared and analyzed within the established hold time for each analysis.

All in house quality control procedures were followed, as described below.



7. General quality control procedures.

- A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in each applicable preparation batch.
- The method blank associated with each applicable batch was below the reporting limit for the requested analytes.
- All laboratory control sample criteria were met.
- All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
- All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.

8. Matrix specific quality control procedures.

Per method requirements, matrix QC was performed for each analysis. Since a sample from this order number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.

9. Reduced aliquots were taken of the sample for the alkalinity, bicarbonate, and carbonate analysis. Reporting limits were elevated accordingly.

10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939. Whenever manual integrations are performed, before and after chromatograms of the peak that were manually integrated are included in the report along with the reason why the re-integration was necessary.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Megan Johnstone  
Inorganics Primary Data Reviewer

9/24/13

Date

Inorganics Final Data Reviewer

9/24/13

Date



### **Inorganic Data Reporting Qualifiers**

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- A “J” is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to ALS’s Method Detection Limit. If the analyte was analyzed for but not detected a “U” is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
  - N - Spiked sample recovery not within control limits.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - Z - Calibration spike recovery not within control limits.



## **Chain of Custody**

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1309217

**Client Name:** Colorado Oil & Gas Conservation Commission

**Client Project Name:** TBAL

**Client Project Number:**

**Client PO Number:** PHA 14-22

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Trip Blank	1309217-1		WATER	16-Sep-13	6:00
752778 Nelson	1309217-2		WATER	16-Sep-13	9:56





ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC  
Project Manager: ARW

Workorder No: 1309217  
Initials: LAS Date: 9/17/13

1. Does this project require any special handling in addition to standard ALS procedures?	YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF:	<input checked="" type="radio"/> YES NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	<input checked="" type="radio"/> YES NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES <input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <input checked="" type="radio"/> #2 #4 RAD ONLY		<input checked="" type="radio"/> YES NO
Cooler #: <u>1</u>		
Temperature (°C): <u>2.0</u>		
No. of custody seals on cooler: <u>1</u>		
External µR/hr reading: <u>11</u>		
Background µR/hr reading: <u>10</u>		
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)		

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / NA Contact: Cubly Date/Time: 9/17/13

Project Manager Signature / Date: Cubly 9/17/13

1309217

From: (719) 846-3091

Peter Gentaufas

Colo. Oil & Gas Cons. Comm.  
213 Conundrum RD

Trinidad, CO 81082

Origin ID: PUBA



J13001300280328

SHIP TO: (970) 496-1511

Amy Wolf

ALS Laboratory Group  
225 COMMERCE DR

FORT COLLINS, CO 80524

BILL SENDER

Ship Date: 16SEP13

ActWgt: 19.0 LB

CAID: 4076443INET3430

Delivery Address Bar Code



Ref # Special Project TBAL

Invoice #

PO #

Dept #

TUE - 17 SEP 10:30A

PRIORITY OVERNIGHT

TRK# 7966 9512 4219

8281

80524

CO-US

DEN

72 FTCA



51AG182561A8E

2.0





## **Sample Results**

# BICARBONATE AS CaCO<sub>3</sub>

## Method EPA310.1

### Sample Results

**Lab Name:** ALS Environmental -- FC  
**Client Name:** Colorado Oil & Gas Conservation Commission  
**Client Project ID:** TBAL  
**Work Order Number:** 1309217 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** METHOD **Result Units:** MG/L  
**Analyst:** Kristen A. Middleton

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
752778 Nelson	1309217-2	09/16/2013	09/18/2013	09/18/2013	N/A	1	200	20		25 ml

#### Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** *ak1309217-1*

# CARBONATE AS CaCO<sub>3</sub>

Method EPA310.1

## Sample Results

**Lab Name:** ALS Environmental -- FC  
**Client Name:** Colorado Oil & Gas Conservation Commission  
**Client Project ID:** TBAL  
**Work Order Number:** 1309217 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** METHOD **Result Units:** MG/L  
**Analyst:** Kristen A. Middleton

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
752778 Nelson	1309217-2	09/16/2013	09/18/2013	09/18/2013	N/A	1	20	20	U	25 ml

### Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** *ak1309217-1*

# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

## Sample Results

**Lab Name:** ALS Environmental -- FC  
**Client Name:** Colorado Oil & Gas Conservation Commission  
**Client Project ID:** TBAL  
**Work Order Number:** 1309217 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** METHOD **Result Units:** MG/L  
**Analyst:** Kristen A. Middleton

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
752778 Nelson	1309217-2	09/16/2013	09/18/2013	09/18/2013	N/A	1	210	20		25 ml

### Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** ak1309217-1

# pH

## Method EPA150.1

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID:	752778 Nelson	Sample Matrix:	WATER	Prep Batch:	PH130918-2	Analyst:	Kristen A. Middleton
Lab ID:	1309217-2	% Moisture:	N/A	QCBatchID:	PH130918-2-2	Sample Aliquot:	20 ML
		Date Collected:	16-Sep-13	Run ID:	pH130918-1A	Final Volume:	20 ML
		Date Extracted:	18-Sep-13	Cleanup:	NONE	Result Units:	pH
		Date Analyzed:	18-Sep-13	Basis:	As Received	Clean DF:	1
		Prep Method:	METHOD	File Name:			

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	Result Qualifier	EPA Qualifier
10-29-7	PH AnalysisTime: 12:40	1	8.61	0.1		

Data Package ID: *ph1309217-1*

# Specific Conductance in Water

Method EPA120.1

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 752778 Nelson	Sample Matrix: WATER	Prep Batch: SC130918-1	Analyst: Kristen A. Middleton
Lab ID: 1309217-2	% Moisture: N/A	QCBatchID: SC130918-1-2	Sample Aliquot: 45 ML
	Date Collected: 16-Sep-13	Run ID: SC130918-1A	Final Volume: 45 ML
	Date Extracted: 18-Sep-13	Cleanup: NONE	Result Units: umhos/cm
	Date Analyzed: 18-Sep-13	Basis: As Received	Clean DF: 1
	Prep Method: METHOD	File Name:	

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	Result Qualifier	EPA Qualifier
10-34-4	SPECIFIC CONDUCTIVITY AnalysisTime: 16:05	1	494	1		

Data Package ID: sc1309217-1

# Total Dissolved Solids

Method EPA160.1

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID:	752778 Nelson	Sample Matrix:	WATER	Prep Batch:	TD130919-1	Analyst:	Kristen A. Middleton
Lab ID:	1309217-2	% Moisture:	N/A	QCBatchID:	TD130919-1-1	Sample Aliquot:	100 ML
		Date Collected:	16-Sep-13	Run ID:	TD130920-1A	Final Volume:	100 ML
		Date Extracted:	19-Sep-13	Cleanup:	NONE	Result Units:	MG/L
		Date Analyzed:	20-Sep-13	Basis:	As Received	Clean DF:	1
		Prep Method:	METHOD	File Name:	Manual Entry		

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	290	20		

Data Package ID: *td1309217-1*

# Ion Chromatography

Method EPA300.0 Revision 2.1

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID:	752778 Nelson
Lab ID:	1309217-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 16-Sep-13

Date Extracted: 17-Sep-13

Date Analyzed: 17-Sep-13

Prep Method: NONE

Prep Batch: IC130917-1

QCBatchID: IC130917-1-1

Run ID: IC130917-1A3

Cleanup: NONE

Basis: As Received

File Name: 30917\_033.dxd

Analyst: Alex J. Devonald

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 17:02	1	9.3	0.1	0.03		
16887-00-6	CHLORIDE AnalysisTime: 17:02	1	15	0.2	0.06		
14797-65-0	NITRITE AS N AnalysisTime: 17:02	1	0.1	0.1	0.03	U	
24959-67-9	BROMIDE AnalysisTime: 17:02	1	0.15	0.2	0.06	J	
14797-55-8	NITRATE AS N AnalysisTime: 17:02	1	0.2	0.2	0.06	U	
14808-79-8	SULFATE AnalysisTime: 17:02	1	0.81	1	0.3	J	

Data Package ID: *ic1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 1 of 1

LIMS Version: 6.670





## **Summary Report Forms**

# BICARBONATE AS CaCO<sub>3</sub>

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: AK130918-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK130918-1

QCBatchID: AK130918-1-1

Run ID: AK130918-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag
AK130918-1MB	9/18/2013	09/18/2013	N/A	1	5	5	U

## Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

LIMS Version: 6.670

Page 1 of 3

# CARBONATE AS CaCO<sub>3</sub>

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: AK130918-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK130918-1

QCBatchID: AK130918-1-1

Run ID: AK130918-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag
AK130918-1MB	9/18/2013	09/18/2013	N/A	1	5	5	U

## Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

LIMS Version: 6.670

Page 2 of 3

# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: AK130918-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK130918-1

QCBatchID: AK130918-1-1

Run ID: AK130918-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag
AK130918-1MB	9/18/2013	09/18/2013	N/A	1	5	5	U

## Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

LIMS Version: 6.670

Page 3 of 3

# TOTAL ALKALINITY AS CaCO<sub>3</sub>

Method EPA310.1

## Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: AK130918-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09/18/2013

Date Analyzed: 09/18/2013

Prep Batch: AK130918-1

QCBatchID: AK130918-1-1

Run ID: AK130918-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
	TOTAL ALKALINITY AS CaCO <sub>3</sub>	100	97.2	5		97	85 - 115

Data Package ID: *ak1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

LIMS Version: 6.670

Page 1 of 1

# Prep Batch ID: AK130918-1

Start Date: 09/18/13

End Date: 09/18/13

Concentration Method: NONE

Batch Created By: klr

Start Time: 10:30

End Time: 15:45

Extract Method: METHOD

Date Created: 09/18/13

Prep Analyst: Kristin L. Ratajczak

Initial Volume Units: ml

Time Created: 9:12

Comments:

Final Volume Units: ml

Validated By: mmj

Date Validated: 09/19/13

Time Validated: 9:50

QC Batch ID: AK130918-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
AK130918-1	MB	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1309239
AK130918-1	LCS	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1309239
1309239-2	DUP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309239
1309241-1	DUP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309241
1309217-2	SMP	752778 Nelson	WATER	9/16/2013	25	100	NONE	1	1309217
1309219-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309219
1309220-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309220
1309239-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309239
1309239-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309239
1309239-3	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309239
1309240-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309240
1309241-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309241
1309241-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309241
1309241-3	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309241
1309241-4	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309241
1309241-5	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309241
1309241-6	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309241

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicate
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standard	SMP	Field Sample
SYS	Sample Yield Spike		

## Prep Batch ID: PH130918-2

Start Date: 09/18/13

End Date: 09/18/13

Concentration Method: NONE

Batch Created By: klr

Start Time: 9:00

End Time: 12:40

Extract Method: METHOD

Date Created: 09/18/13

Prep Analyst: Kristin L. Ratajczak

Initial Volume Units: ml

Time Created: 9:08

Final Volume Units: ml

Validated By: klr

Date Validated: 09/18/13

Time Validated: 14:30

Comments:

QC Batch ID: PH130918-2-2

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
1309234-1	DUP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1309234
1309217-2	SMP	752778 Nelson	WATER	9/16/2013	20	20	NONE	1	1309217
1309219-1	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1309219
1309220-1	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1309220
1309234-1	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1309234

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicate
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standard	SMP	Field Sample
SYS	Sample Yield Spike		

**PH**  
**Method EPA150.1**  
**Calibration Verifications**

**Lab Name:** ALS Environmental -- FC

**Work Order Number:** 1309217

**Client Name:** Colorado Oil & Gas Conservation Commission

**ClientProject ID:** TBAL

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**Run ID:** pH130918-1A

**Result Units:** pH

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Lab ID	Verification Type	Date Analyzed	Time Analyzed	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
ICV	Initial Calibration	9/18/2013		7	7.01	0.1	N/A		6.95 - 7.05
CCV1	Continuing Calibration	9/18/2013		7	7.01	0.1	N/A		6.9 - 7.1

**Data Package ID:** *ph1309217-1*

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**Date Printed:** Tuesday, September 24, 2013

**ALS Environmental -- FC**

LIMS Version: 6.670

Page 1 of 1



## Prep Batch ID: SC130918-1

Start Date: 09/18/13

End Date: 09/18/13

Concentration Method: NONE

Batch Created By: klr

Start Time: 9:15

End Time: 16:05

Extract Method: METHOD

Date Created: 09/18/13

Prep Analyst: Kristin L. Ratajczak

Initial Volume Units: ml

Time Created: 9:10

Comments:

Final Volume Units: ml

Validated By: klr

Date Validated: 09/18/13

Time Validated: 16:13

QC Batch ID: SC130918-1-2

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
1309234-1	DUP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1309234
1309217-2	SMP	752778 Nelson	WATER	9/16/2013	45	45	NONE	1	1309217
1309234-1	SMP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1309234

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicate
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standard	SMP	Field Sample
SYS	Sample Yield Spike		

# SPECIFIC CONDUCTIVITY

Method EPA120.1

## Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Run ID: SC130918-1A

Result Units: umhos/c

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
ICV	Initial Calibration	9/18/2013		718	720	1	N/A	100	646.2 - 789.7
CCV1	Continuing Calibration	9/18/2013		1410	1410	1	N/A	100	1271.7 - 1554.3

Data Package ID: *sc1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

LIMS Version: 6.670

Page 1 of 1

# Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: TD130919-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-Sep-13

Date Analyzed: 20-Sep-13

Prep Method: METHOD

Prep Batch: TD130919-1

QCBatchID: TD130919-1-1

Run ID: TD130920-1A

Cleanup: NONE

Basis: N/A

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit LOD/LOQ	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	20	20	U	

Data Package ID: *td1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 1 of 1

LIMS Version: 6.670

# Total Dissolved Solids

Method EPA160.1

## Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: TD130919-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09/19/2013

Date Analyzed: 09/20/2013

Prep Method: METHOD

Prep Batch: TD130919-1

QCBatchID: TD130919-1-1

Run ID: TD130920-1A

Cleanup: NONE

Basis: N/A

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	411	20		103	85 - 115%

Data Package ID: *td1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 1 of 1

LIMS Version: 6.670

# Prep Batch ID: TD130919-1

Start Date: 09/19/13

End Date: 09/19/13

Concentration Method: NONE

Batch Created By: klr

Start Time: 9:00

End Time: 14:30

Extract Method: METHOD

Date Created: 09/19/13

Prep Analyst: Kristin L. Ratajczak

Initial Volume Units: ml

Time Created: 9:01

Comments:

Final Volume Units: ml

Validated By: klr

Date Validated: 09/19/13

Time Validated: 14:40

QC Batch ID: TD130919-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
TD130919-1	MB	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1309241
TD130919-1	LCS	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1309241
1309241-1	DUP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309241
1309217-2	SMP	752778 Nelson	WATER	9/16/2013	100	100	NONE	1	1309217
1309219-1	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309219
1309220-1	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309220
1309239-1	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1309239
1309239-2	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309239
1309239-3	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1309239
1309240-1	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1309240
1309241-1	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309241
1309241-2	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309241
1309241-3	SMP	XXXXXX	WATER	XXXXXX	25	25	NONE	1	1309241
1309241-4	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309241
1309241-5	SMP	XXXXXX	WATER	XXXXXX	25	25	NONE	1	1309241
1309241-6	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309241
1309257-1	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1309257

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicate
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standard	SMP	Field Sample
SYS	Sample Yield Spike		

# Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: IC130917-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Sep-13

Date Analyzed: 17-Sep-13

Prep Batch: IC130917-1

QCBatchID: IC130917-1-1

Run ID: IC130917-1A3

Cleanup: NONE

Basis: N/A

File Name: 30917\_014.dxd

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit LOD/LOQ	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	0.03	U	
16887-00-6	CHLORIDE	1	0.2	0.2	0.06	U	
14797-65-0	NITRITE AS N	1	0.1	0.1	0.03	U	
24959-67-9	BROMIDE	1	0.2	0.2	0.06	U	
14797-55-8	NITRATE AS N	1	0.2	0.2	0.06	U	
14808-79-8	SULFATE	1	1	1	0.3	U	

Data Package ID: ic1309217-1

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 1 of 1

LIMS Version: 6.670

# Ion Chromatography

Method EPA300.0 Revision 2.1

## Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: IC130917-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09/17/2013

Date Analyzed: 09/17/2013

Prep Method: NONE

Prep Batch: IC130917-1

QCBatchID: IC130917-1-1

Run ID: IC130917-1A3

Cleanup: NONE

Basis: N/A

File Name: 30917\_013.dxd

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16984-48-8	FLUORIDE	2	1.99	0.1		100	90 - 110%
16887-00-6	CHLORIDE	5	5.01	0.2		100	90 - 110%
14797-65-0	NITRITE AS N	2	1.96	0.1		98	90 - 110%
24959-67-9	BROMIDE	5	5.29	0.2		106	90 - 110%
14797-55-8	NITRATE AS N	5	5.17	0.2		103	90 - 110%
14808-79-8	SULFATE	20	19.6	1		98	90 - 110%

Data Package ID: ic1309217-1

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 1 of 1

LIMS Version: 6.670

# Prep Batch ID: IC130917-1

Start Date: 09/17/13

End Date: 09/17/13

Concentration Method: NONE

Batch Created By: ajd

Start Time: 10:27

End Time: 11:30

Extract Method: NONE

Date Created: 09/17/13

Prep Analyst: Alex J. Devonald

Initial Volume Units: ml

Time Created: 10:27

Comments:

Final Volume Units: ml

Validated By: ajd

Date Validated: 09/17/13

Time Validated: 16:28

Water

QC Batch ID: IC130917-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
IC130917-1	RVS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
IC130917-1	MB	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
IC130917-1	LCS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1308564-17	MS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1309216-3	MS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1308564-17	MSD	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1309216-3	MSD	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1308564-12	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1308564-17	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1308564-2	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1308564-22	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1308564-27	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1308564-7	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308564
1309216-1	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-10	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-11	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-12	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-13	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-2	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-3	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-4	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-5	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-6	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-7	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-8	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309216-9	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1309216
1309217-2	SMP	752778 Nelson	WATER	9/16/2013	5	5	NONE	1	1309217



# Ion Chromatography

Method EPA300.0

## Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: ICV

QC Type: Initial Calibration

File Name: 30909\_009.dxd

Run ID: IC130917-1A3

Date Analyzed: 09/09/2013

Time Analyzed: 18:33

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	2.5	2.53	0.1		101	90 - 110%
16887-00-6	CHLORIDE	5	4.86	0.2		97	90 - 110%
14797-65-0	NITRITE AS N	4	4.07	0.1		102	90 - 110%
24959-67-9	BROMIDE	5	4.90	0.2		98	90 - 110%
14797-55-8	NITRATE AS N	5	4.78	0.2		96	90 - 110%
14808-79-8	SULFATE	25	24.6	1		99	90 - 110%

Data Package ID: ic1309217-1

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 1 of 4

LIMS Version: 6.670

# Ion Chromatography

Method EPA300.0

## Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCV1

QC Type: Continuing Calibration

File Name: 30917\_011.dxd

Run ID: IC130917-1A3

Date Analyzed: 09/17/2013

Time Analyzed: 11:53

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	5	4.99	0.1		100	90 - 110%
16887-00-6	CHLORIDE	10	9.95	0.2		100	90 - 110%
14797-65-0	NITRITE AS N	5	5.05	0.1		101	90 - 110%
24959-67-9	BROMIDE	10	9.93	0.2		99	90 - 110%
14797-55-8	NITRATE AS N	10	10.0	0.2		100	90 - 110%
14808-79-8	SULFATE	50	50.0	1		100	90 - 110%

Data Package ID: ic1309217-1

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 2 of 4

LIMS Version: 6.670

# Ion Chromatography

## Method EPA300.0 Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCV2

QC Type: Continuing Calibration

File Name: 30917\_023.dxd

Run ID: IC130917-1A3

Date Analyzed: 09/17/2013

Time Analyzed: 14:42

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	5	5.16	0.1		103	90 - 110%
16887-00-6	CHLORIDE	10	9.93	0.2		99	90 - 110%
14797-65-0	NITRITE AS N	5	5.01	0.1		100	90 - 110%
24959-67-9	BROMIDE	10	9.92	0.2		99	90 - 110%
14797-55-8	NITRATE AS N	10	9.99	0.2		100	90 - 110%
14808-79-8	SULFATE	50	50.0	1		100	90 - 110%

Data Package ID: ic1309217-1

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 3 of 4

LIMS Version: 6.670

# Ion Chromatography

## Method EPA300.0 Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCV3

QC Type: Continuing Calibration

File Name: 30917\_035.DXD

Run ID: IC130917-1A3

Date Analyzed: 09/17/2013

Time Analyzed: 17:30

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	5	5.20	0.1		104	90 - 110%
16887-00-6	CHLORIDE	10	9.94	0.2		99	90 - 110%
14797-65-0	NITRITE AS N	5	5.02	0.1		100	90 - 110%
24959-67-9	BROMIDE	10	9.94	0.2		99	90 - 110%
14797-55-8	NITRATE AS N	10	9.98	0.2		100	90 - 110%
14808-79-8	SULFATE	50	50.1	1		100	90 - 110%

Data Package ID: ic1309217-1

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 4 of 4

LIMS Version: 6.670

# Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: ICB

QC Type: Initial Calibration

Run ID: IC130917-1A3

Date Analyzed: 09/09/2013

Time Analyzed: 6:47:33 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.2	0.2	U
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 1 of 4

LIMS Version: 6.670

# Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCB1

QC Type: Continuing Calibration

Run ID: IC130917-1A3

Date Analyzed: 09/17/2013

Time Analyzed: 12:07:34 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.2	0.2	U
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 2 of 4

LIMS Version: 6.670

# Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCB2

QC Type: Continuing Calibration

Run ID: IC130917-1A3

Date Analyzed: 09/17/2013

Time Analyzed: 2:56:16 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.2	0.2	U
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 3 of 4

LIMS Version: 6.670

# Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1309217

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCB3

QC Type: Continuing Calibration

Run ID: IC130917-1A3

Date Analyzed: 09/17/2013

Time Analyzed: 5:45:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.2	0.2	U
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1309217-1*

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

Page 4 of 4

LIMS Version: 6.670





## Raw Data

# Alkalinity Raw Data Worksheet

Anal Run ID AK130918-1A

Anal Start Date 9/18/2013

Standardization Ref ID AlkalinityCAL130918-1

## Standardization Of Alkalinity

Rep Num	THAM Conc	Aliq Titrated (mL)	vol to pH 4.5(mL)	HCl Conc(N)	Conc Units	Avg HCl Conc
1	0.2	1	10.28	0.0194553	N	0.0194553
2	0.2	1	10.26	0.0194932	N	
3	0.2	1	10.3	0.0194175	N	

Num	Don't Use	ReRun Num	Lab ID	QC Type	Anal Dil	Aliq Titrated (mL)	vol to pH 8.3(mL)	vol to pH 4.5(mL)	total vol(mL)	HCO <sub>3</sub> (mg/L as CaCO <sub>3</sub> )	CO <sub>3</sub> (mg/L as CaCO <sub>3</sub> )	OH (mg/L as CaCO <sub>3</sub> )	Total Alk (mg/L as CaCO <sub>3</sub> )	Expected	%Rec	vol to LL pH(mL)
1	<input type="checkbox"/>	0	AK130918-1	MB	1	100	0	0.12	0.12	1.167318	0	0	1.167318			NA
2	<input type="checkbox"/>	0	AK130918-1	LCS	1	100	4.92	5.07	9.99	1.459144	95.72009	0	97.17924			NA
3	<input type="checkbox"/>	0	1309217-2	SMP	1	25	0.12	5.37	5.49	204.2807	9.338545	0	213.6192			NA
4	<input type="checkbox"/>	0	1309219-1	SMP	1	25	173.04	175.5	348.54	95.71976	13466.18	0	13561.9			NA
5	<input type="checkbox"/>	0	1309220-1	SMP	1	25	16.92	40.43	57.35	914.7883	1316.735	0	2231.523			NA
6	<input type="checkbox"/>	0	1309239-1	SMP	1	25	0	10.81	10.81	420.6237	0	0	420.6237			NA
7	<input type="checkbox"/>	0	1309239-2	SMP	1	25	0	12.63	12.63	491.4409	0	0	491.4409			NA
8	<input type="checkbox"/>	0	1309239-2	DUP	1	25	0	12.69	12.69	493.7755	0	0	493.7755			NA
9	<input type="checkbox"/>	0	1309239-3	SMP	1	25	0	6.25	6.25	243.1913	0	0	243.1913			NA
10	<input type="checkbox"/>	0	1309240-1	SMP	1	25	0	11.08	11.08	431.1295	0	0	431.1295			NA
11	<input type="checkbox"/>	0	1309241-1	SMP	1	25	0	7.71	7.71	300.0008	0	0	300.0008			NA
12	<input type="checkbox"/>	0	1309241-1	DUP	1	25	0	7.77	7.77	302.3354	0	0	302.3354			NA
13	<input type="checkbox"/>	0	1309241-2	SMP	1	25	0	8.12	8.12	315.9541	0	0	315.9541			NA
14	<input type="checkbox"/>	0	1309241-3	SMP	1	25	0	9.7	9.7	377.4329	0	0	377.4329			NA
15	<input type="checkbox"/>	0	1309241-4	SMP	1	25	0	6.67	6.67	259.5337	0	0	259.5337			NA
16	<input type="checkbox"/>	0	1309241-5	SMP	1	25	0	9.06	9.06	352.5301	0	0	352.5301			NA
17	<input type="checkbox"/>	0	1309241-6	SMP	1	25	0	4.94	4.94	192.2184	0	0	192.2184			NA
18	<input type="checkbox"/>	0	1309234-1	SMP	1	25	0.1	15.55	15.65	601.1689	7.782121	0	608.951			NA
19	<input type="checkbox"/>	0	1309236-1	SMP	1	25	0.46	10.42	10.88	387.5496	35.79776	0	423.3474			NA

Comments: Prepped and analyzed on 09/18/13 from 1030-1545. KLR.

## Standards, Batch QC, and Matrix Spike Information

ID	Parent ID	Parent Conc	Parent Vol.	Final Vol.
ICV	ST101202-3	10000	1	100
CCV	ST101202-3	10000	1	100

## Reagent List:

0.020 N HCl Titrant	RG130724-2
Phenolphthalein Indicator	RG130531-5
Bromocresol Green Indicator	RG130820-1
0.20 N Std. THAM	ST121213-1
0.20 N NaCO <sub>3</sub> (ICV, LCS, CCV's - 1.0 mL)	ST121213-2

## pH Calculations and Quality Control Results

Prep & Analysis Date: 09/18/2013  
 Prep & Analysis Time: 0900-1240  
 Analyst: KLR

### Reagent List:

4.01:	10.00:	2.00:
ST130712-2	ST130816-1	ST130725-1
7.00 (CCV):	7.00 (ICV):	12.45:
ST120921-2	ST130708-1	ST130715-1

ID	Temp. (°C)	Method	sample vol (g)	sample vol (mL)	pH Value	QC Acceptance Range (pH units)
pH 4.01	25.4	NA	NA	NA	4.01	+/- 0.05
pH 7.00	25.4	NA	NA	NA	7.00	
pH 10.00	25.4	NA	NA	NA	10.00	
ICV - pH 7.00	25.4	NA	NA	NA	7.01	
1309200-1	25.4	SW9045	20	20.0	7.39	
1309200-1 DUP	25.4	SW9045	20	20.0	7.40	
1309201-1	25.4	SW9045	20	20.0	9.03	
1309195-2	25.4	SW9040	NA	20.0	6.88	
1309195-3	25.4	SW9040	NA	20.0	6.89	
1309217-2	25.4	EPA150.1	NA	20.0	8.61	
1309219-1	25.4	EPA150.1	NA	20.0	9.69	
1309220-1	25.4	EPA150.1	NA	20.0	9.07	
1309234-1	25.4	SW4500H	NA	20.0	8.42	
1309234-1 DUP	25.4	SW4500H	NA	20.0	8.43	
CCV- pH 7.00	25.4	NA	NA	NA	7.01	+/- 0.10
1309236-1	25.4	SM4500H	NA	20.0	8.78	+/- 0.10
CCV- pH 7.00	24.2	NA	NA	NA	7.00	

### DUPLICATE SUMMARY (Aq)

ID	native pH Value	duplic pH Value	difference of native - dup	accept. limit
1309234-1	8.42	8.43	0.01	0.2 pH units

### DUPLICATE SUMMARY (Soil)

ID	native pH Value	duplic pH Value	difference of native - dup	accept. limit
1309200-1	7.39	7.40	0.01	0.5 pH units

### pH INFORMATION:

SOP 1126 rev.17 / EPA Method 150.1, 9040C, 9045D, and SM4500-H+ B  
 Instrument : Fisher Scientific pH / mV meter model 50 (SN C0000643)  
 Electrode : Orion - Ross Sure-Flow Electrode Model 81-72BN

## Specific Conductivity Calculations & Quality Control Results

Prep & Analysis Date: 09/18/2013

Prep & Analysis Time: 0915-1605

Analyst: KLR

ID	sample vol (mL)	Temp. °C	Conductivity Reading (umhos/cm)	% Recovery	recovery limit
Calibration Standard ( * )	NA	25.4	1413	100	646.2 - 789.8
ICV-2nd Source ( ** )	NA	25.4	720		
1309234-1	45	25.4	1359		
1309234-1 DUP	45	25.4	1357		
1309236-1	45	25.4	865		
1309217-2	45	25.4	494	100	1271.7 - 1554.3
CCV-1 ( * )	NA	25.4	1409		

### DUPLICATE SUMMARY

ID	native Spec. Cond. Value	duplic Spec. Cond. Value	RPD %	RPD accept. limit
1309234-1	1359.0000	1357.0000	0	0-10%

### Specific Conductivity - EPA Method 120.1/9050A/SM2510B - SOP 1128

Instrument : Fisher Scientific Conductivity/pH/mV meter model accumet 50 (SN C0000643)  
 Electrode : YSI Incorporated. Model 3440 (Cell K = 10/cm) OR  
 VWR Digital Conductivity Meter w/ electrode NIST (SN A22036)

Reagent List: 0.010 M KCl Solution [1413umhos/cm] ( \* );  
**ST130712-1**

0.005 M KCl Solution [718umhos/cm] ( \*\* );  
**ST130607-4**

# TDS Raw Data Worksheet

Anal Run ID **TD130920-1A**

Anal Start Date **9/20/2013**

Num	Don't Use	ReRun Num	Lab ID	QC Type	Samp Vol (ml)	Empty Beaker (g)	A - Beaker + Residue gross (g)	A - Net mass (mg)	B - Beaker + Residue gross (g)	B - Net mass (mg)	Constant Wt (+/- 0.5mg)	Constant Wt (+/- 4%)	calculated conc (mg/L)	DL (mg/L)
1	<input type="checkbox"/>	0	TD130919-1	MB	100	77.9134	77.9131	-0.3	77.9136	0.2	0.5	NA	2	20
2	<input type="checkbox"/>	0	TD130919-1	LCS	100	78.1895	78.2294	39.9	78.2306	41.1	1.2	2.96%	411	20
3	<input type="checkbox"/>	0	1309217-2	SMP	100	76.008	76.0363	28.3	76.0372	29.2	0.9	3.13%	292	20
4	<input type="checkbox"/>	0	1309219-1	SMP	50	77.6645	77.6907	26.2	77.6899	25.4	0.8	3.10%	508	40
5	<input type="checkbox"/>	0	1309220-1	SMP	50	80.6785	80.7075	29	80.7064	27.9	1.1	3.87%	558	40
6	<input type="checkbox"/>	0	1309239-1	SMP	100	77.4501	77.5264	76.3	77.527	76.9	0.6	0.78%	769	20
7	<input type="checkbox"/>	0	1309239-2	SMP	50	81.458	81.5236	65.6	81.5218	63.8	1.8	2.78%	1276	40
8	<input type="checkbox"/>	0	1309239-3	SMP	100	77.3518	77.3925	40.7	77.3928	41	0.3	0.73%	410	20
9	<input type="checkbox"/>	0	1309240-1	SMP	100	72.4817	72.5622	80.5	72.5616	79.9	0.6	0.75%	799	20
10	<input type="checkbox"/>	0	1309241-1	SMP	50	83.0691	83.1599	90.8	83.1564	87.3	3.5	3.92%	1746	40
11	<input type="checkbox"/>	0	1309241-1	DUP	50	77.936	78.028	92	78.0258	89.8	2.2	2.42%	1796	40
12	<input type="checkbox"/>	0	1309241-2	SMP	50	67.9283	67.972	43.7	67.9706	42.3	1.4	3.26%	846	40
13	<input type="checkbox"/>	0	1309241-3	SMP	25	77.0586	77.1481	89.5	77.1461	87.5	2	2.26%	3500	80
14	<input type="checkbox"/>	0	1309241-4	SMP	50	77.7574	77.8197	62.3	77.8205	63.1	0.8	1.28%	1262	40
15	<input type="checkbox"/>	0	1309241-5	SMP	25	76.1377	76.202	64.3	76.2003	62.6	1.7	2.68%	2504	80
16	<input type="checkbox"/>	0	1309241-6	SMP	5	78.3739	78.4746	100.7	78.4734	99.5	1.2	1.20%	19900	400
17	<input type="checkbox"/>	0	1309257-1	SMP	50	76.7584	76.8389	80.5	76.8381	79.7	0.8	1.00%	1594	40
18	<input type="checkbox"/>	0	1309234-1	SMP	50	77.27	77.3109	40.9	77.312	42	1.1	2.65%	840	40
19	<input type="checkbox"/>	0	1309236-1	SMP	100	81.8991	81.9501	51	81.951	51.9	0.9	1.75%	519	20
20	<input type="checkbox"/>	0	1309264-6	SMP	100	77.8773	77.9134	36.1	77.9136	36.3	0.2	0.55%	363	20
21	<input type="checkbox"/>	0	1309264-6	DUP	100	70.8	70.8366	36.6	70.8369	36.9	0.3	0.82%	369	20

**Comments:** Analyzed on 09/20/13 from 0950-1530. KLR.

Standards, Batch QC, and Matrix Spike Information				
ID	Parent ID	Parent Conc	Parent Vol.	Final Vol.
LCS	ST130318-1	40000	1	100

## Reagent List:

TDS Spike Solution: 40.0 mg NaCl/mL **ST130318-1**

Shaded values used to determine the calculated concentration

Line	Sample	Sample Type	Method	Data File	Comment
1	5X STD	Calibration	130909ic1.met	c:\peaknet\data\130909ic1\130909_002.dxd	
2	10X STD	Calibration	130909ic1.met	c:\peaknet\data\130909ic1\130909_003.dxd	
3	25X STD	Calibration	130909ic1.met	c:\peaknet\data\130909ic1\130909_004.dxd	
4	100X STD	Calibration	130909ic1.met	c:\peaknet\data\130909ic1\130909_005.dxd	
5	500X STD	Calibration	130909ic1.met	c:\peaknet\data\130909ic1\130909_006.dxd	
6	1000X STD	Calibration	130909ic1.met	c:\peaknet\data\130909ic1\130909_007.dxd	
7	0 STD	Calibration	130909ic1.met	c:\peaknet\data\130909ic1\130909_008.dxd	
8	ICV	Sample	130909ic1.met	c:\peaknet\data\130909ic1\130909_009.dxd	
9	ICB	Sample	130909ic1.met	c:\peaknet\data\130909ic1\130909_010.dxd	
10	blank	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_010.dxd	
11	CCV	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_011.dxd	CCV All Pass
12	CCB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_012.dxd	CCB
13	IC130917-1LCS	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_013.dxd	Water All Pass
14	IC130917-1MB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_014.dxd	Water
15	IC130917-1RVS	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_015.dxd	Water
16	1309216-1	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_016.dxd	NO3,SO4
17	1309216-2	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_017.dxd	NO3,SO4
18	1309216-3	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_018.dxd	NO3,SO4
19	1309216-3MS	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_019.dxd	NO3,SO4
20	1309216-3MSD	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_020.dxd	NO3,SO4
21	1309216-4	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_021.dxd	NO3,SO4
22	1309216-5	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_022.dxd	NO3,SO4
23	CCV	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_023.dxd	CCV All Pass
24	CCB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_024.dxd	CCB
25	1309216-6	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_025.dxd	NO3,SO4
26	1309216-7	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_026.dxd	NO3,SO4
27	1309216-8 2x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_027.dxd	NO3,SO4
28	1309216-9	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_028.dxd	NO3,SO4
29	1309216-10	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_029.dxd	NO3,SO4
30	1309216-11	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_030.dxd	NO3,SO4
31	1309216-12	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_031.dxd	NO3,SO4
32	1309216-13	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_032.dxd	NO3,SO4
33	1309217-2	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_033.dxd	Br,Cl,F,NO2,NO3,SO4
34	1308564-7	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_034.dxd	Cl,SO4
35	CCV	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_035.dxd	CCV All Pass
36	CCB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_036.dxd	CCB
37	1308564-2	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_037.dxd	Cl,SO4
38	1308564-12 10x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_038.dxd	Cl,SO4
39	1308564-17	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_039.dxd	Cl,SO4
40	1308564-17MS	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_040.dxd	Cl,SO4
41	1308564-17MSD	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_041.dxd	Cl,SO4
42	1308564-22 5x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_042.dxd	Cl,SO4
43	1308564-27 5x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_043.dxd	Cl,SO4
44	1308530-2	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_044.dxd	Cl,SO4 (RR for Cl)
45	1308513-64 2000x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_045.dxd	Cl,SO4 (RR for Cl)
46	1308513-65 5000x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_046.dxd	Cl,SO4 (RR for Cl)
47	CCV	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_047.dxd	CCV All Pass
48	CCB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_048.dxd	CCB
49	IC130917-2LCS	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_049.dxd	Water All Pass
50	IC130917-2MB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_050.dxd	Water
51	IC130917-2RVS	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_051.dxd	Water
52	1308513-81 10x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_052.dxd	Cl,SO4
53	1308513-81MS 10x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_053.dxd	Cl,SO4
54	1308513-81MSD 10x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_054.dxd	Cl,SO4
55	1308513-82	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_055.dxd	Cl,SO4
56	1308513-83	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_056.dxd	Cl,SO4
57	1308513-84 25x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_057.dxd	Cl,SO4
58	1308513-85 50x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_058.dxd	Cl,SO4
59	CCV	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_059.dxd	CCV All Pass
60	CCB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_060.dxd	CCB
61	1308513-86 50x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_061.dxd	Cl,SO4
62	1308513-87 20x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_062.dxd	Cl,SO4
63	1308513-88 20x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_063.dxd	Cl,SO4
64	1308513-89 50x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_064.dxd	Cl,SO4
65	1308513-90 5x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_065.dxd	Cl,SO4
66	1308513-91	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_066.dxd	Cl,SO4
67	1308513-92	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_067.dxd	Cl,SO4
68	1308513-93	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_068.dxd	Cl,SO4
69	1308513-94	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_069.dxd	Cl,SO4
70	1308513-95	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_070.dxd	Cl,SO4
71	CCV	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_071.dxd	CCV All Pass
72	CCB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_072.dxd	CCV
73	1308513-96	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_073.dxd	Cl,SO4
74	1308513-97 10x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_074.dxd	Cl,SO4
75	1308513-98 10x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_075.dxd	Cl,SO4
76	1308513-99	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_076.dxd	Cl,SO4
77	1308513-100 5x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_077.dxd	Cl,SO4
78	1309216-8 5x	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_078.dxd	NO3,SO4
79	CCV	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_079.dxd	CCV All Pass
80	CCB	Sample	130909ic1.met	c:\peaknet\data\130917ic1\130917_080.dxd	CCB
81	Stop	Sample	stop.met	c:\peaknet\data\130917ic1\130917_081.dxd	

Default Method Path: C:\PEAKNET\METHOD  
 Default Data Path: C:\PEAKNET\DATA\130701\IC1  
 Comment:

BatchDx created schedule. Analyst: *ADD*  
 Instrument #1: DIONEX DX-120. ID Serial Number: 99060762

Analytical Column: Dionex IonPac AS14 S/N 029999

Methods: EPA 300.0 and SW9056, ALS SOP 1113

Eluent: Made daily, 10mL of Eluent Concentrate ID: RG130304-2 to 1000mL of DI water.

Final ID Aliq

cal std level 1 (1000x)	10.00	ST130603-9, ST130613-1	0.01
cal std level 2 (100x)	5.00	"	0.05
cal std level 3 (25x)	5.00	"	0.20
cal std level 4 (10x)	5.00	"	0.50
cal std level 5 (5x)	5.00	"	1.00
cal std level 6 (2.5x)	5.00	"	2.00

CCV 5.00 ST130909-7, ST130909-5 0.50

RVS 5.00 ST130909-7, ST130909-5 0.01

ICV 5.00 ST130502-5 0.25

ST130813-1 0.02

LCS &amp; MS/D 5.00 ST130208-9, ST130909-4 0.05

Dilutions Table: All to 5mL Final Volume

10X 0.5mL

20X 0.25mL

25X 0.2mL

50X 0.1mL

100X 0.05mL

200X 0.025mL

500X 0.01mL

## Method Report - 130909ic1.met

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### Method Information : Select Module(s)

System Name : DX-120 IC-1  
System Number : 1  
Method Type : Ion Chromatography  
Column : AS14 4-MM  
Analyst : WETCHEM  
Comment : Flow rate = 1.2 mL/min,  
Eluent = 3.5mM Na2CO3 / 1.0 mM NaHCO3

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### DX-120 Timed Events

Module Name : DX-120 #1  
Module Serial Number : 99060762  
System Mode : Column  
Column : A  
Pump : On  
SRS / Cell : On  
Eluent Pressure : On  
Pressure Unit : psi  
TTL 1 Label : TTL 1  
TTL 2 Label : TTL 2  
Comment :

Time	Offset	Valve	TTL1	TTL2	AC	Collect
Init	*	Load	Low	Low	Off	
0.00		Load	Low	Low	Off	Begin
0.10		Inject	Low	Low	Off	
0.40		Load	Low	Low	Off	
11.80		Load	High	Low	Off	

---

### DX-120 Detector Parameters

Detector Type : DX-120  
Data collection time (minutes) : 14.00  
Data Collection Rate : 5.00  
Real time plot scale maximum ( $\mu$ S) : 40.000  
Real time plot scale minimum ( $\mu$ S) : -3.000

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### DX-120 Integration Parameters

Peak detection algorithm : Standard  
Starting peak width (seconds) : 8.00  
Peak threshold : 0.50  
Peak area reject (area counts) : 800.00  
Reference peak area reject (area counts) : 1000.00

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### DX-120 Smoothing Parameters

Filter Type : No filter

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**DX-120 Report Data****Report Format File : C:\PeakNet\method\IC Report\_std.rpt****Print Sample Analysis : Yes****Print Calibration Update : Yes****Print Check Standard : Yes****System Suitability Tests :****No system suitability tests selected.**

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**DX-120 Integration Data Events**

Time	Description
0.00	Stop peak detection
0.05	Force baseline at start of all peaks
1.90	Start peak detection
2.20	Void volume treatment for this peak
3.00	Void volume treatment for this peak

---

**DX-120 Calibration Parameters****External or internal calibration : EXTERNAL****Number of replicates for calibration : 1****Rejection : Manual****Level Weighting : Equal****Calibration standard volume : 1.00****Default sample volume : 1.00****Amount units :****Replace retention time : Yes****Update response : Yes****Default dilution factor : 1.00****Default response factor for unknown peaks : 0.00**

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**Calculate unknowns by area or height : Area****DX-120 Component Identification Table**

Component	Retention	Tolerance	Reference
Fluoride	2.79 min	5.00 %	
Chloride	3.92 min	5.00 %	
Nitrite as N	4.60 min	4.90 %	
Bromide	5.76 min	7.30 %	
Nitrate as N	6.67 min	10.00 %	
Orthophosphate as P	9.33 min	4.10 %	
Sulfate	11.31 min	4.10 %	
Nitrate/Nitrite as N	20.00 min	5.00 %	

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**DX-120 Component Quantitation Table**

Component	Retention	Low Limit	High Limit
Fluoride	2.79 min	100	10000
Chloride	3.92 min	200	20000
Nitrite as N	4.60 min	100	10000
Bromide	5.76 min	200	20000
Nitrate as N	6.67 min	200	20000
Orthophosphate as P	9.53 min	300	20000
Sulfate	11.31 min	500	100000
Nitrate/Nitrite as N	20.00 min	1	10

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**DX-120 Component Calibration Table**

Component	Retention Time	Curve Fit	Origin	Cal. by	Response Component	Relative Factor
Fluoride	2.79 min	Quadratic	Ignore	Area		0.00
Chloride	3.92 min	Quadratic	Ignore	Area		0.00
Nitrite as N	4.60 min	Quadratic	Ignore	Area		0.00
Bromide	5.76 min	Quadratic	Ignore	Area		0.00
Nitrate as N	6.67 min	Quadratic	Ignore	Area		0.00
Orthophosphate as P	9.53 min	Quadratic	Ignore	Area		0.00
Sulfate	11.31 min	Quadratic	Ignore	Area		0.00
Nitrate/Nitrite as N	20.00 min	Quadratic	Ignore	Area		0.00

---

**DX-120 Component = Fluoride Levels Table**

Retention Time : 2.79 min

Amount units :

Replicate unit type : Area

Number of levels : 7

Number of replicates : 1

Level	Amount	Replicate 1
1	10000.00	2.01875e + 006
2	5000.00	941793
3	2000.00	343368
4	500.00	79953
5	100.00	12861
6	50.00	7149

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**DX-120 Component = Chloride Levels Table**

**Retention Time : 3.92 min**

**Amount units :**

**Replicate unit type : Area**

**Number of levels : 7**

**Number of replicates : 1**

<b>Level</b>	<b>Amount</b>	<b>Replicate 1</b>
<b>1</b>	<b>20000.00</b>	<b>3.29465e + 006</b>
<b>2</b>	<b>10000.00</b>	<b>1.49153e + 006</b>
<b>3</b>	<b>4000.00</b>	<b>542675</b>
<b>4</b>	<b>1000.00</b>	<b>133814</b>
<b>5</b>	<b>200.00</b>	<b>32165</b>
<b>6</b>	<b>100.00</b>	<b>18219</b>

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**DX-120 Component = Nitrite as N Levels Table**

**Retention Time : 4.60 min**

**Amount units :**

**Replicate unit type : Area**

**Number of levels : 7**

**Number of replicates : 1**

<b>Level</b>	<b>Amount</b>	<b>Replicate 1</b>
<b>1</b>	<b>10000.00</b>	<b>3.29604e + 006</b>
<b>2</b>	<b>5000.00</b>	<b>1.54334e + 006</b>
<b>3</b>	<b>2000.00</b>	<b>571885</b>
<b>4</b>	<b>500.00</b>	<b>139857</b>
<b>5</b>	<b>100.00</b>	<b>26572</b>
<b>6</b>	<b>50.00</b>	<b>13111</b>

---

**DX-120 Component = Bromide Levels Table**

**Retention Time : 5.76 min**

**Amount units :**

**Replicate unit type : Area**

**Number of levels : 7**

**Number of replicates : 1**

<b>Level</b>	<b>Amount</b>	<b>Replicate 1</b>
<b>1</b>	<b>20000.00</b>	<b>1.1793e + 006</b>
<b>2</b>	<b>10000.00</b>	<b>554302</b>
<b>3</b>	<b>4000.00</b>	<b>211174</b>
<b>4</b>	<b>1000.00</b>	<b>51399</b>
<b>5</b>	<b>200.00</b>	<b>9383</b>
<b>6</b>	<b>100.00</b>	<b>4197</b>

---

---

**DX-120 Component = Nitrate as N Levels Table**

**Retention Time : 6.67 min**

**Amount units :**

**Replicate unit type : Area**

**Number of levels : 7**

**Number of replicates : 1**

<b>Level</b>	<b>Amount</b>	<b>Replicate 1</b>
<b>1</b>	<b>20000.00</b>	<b>8.51666e + 006</b>
<b>2</b>	<b>10000.00</b>	<b>3.77525e + 006</b>
<b>3</b>	<b>4000.00</b>	<b>1.32814e + 006</b>
<b>4</b>	<b>1000.00</b>	<b>309883</b>
<b>5</b>	<b>200.00</b>	<b>61115</b>
<b>6</b>	<b>100.00</b>	<b>24277</b>

---

**DX-120 Component = Orthophosphate as P Levels Table**

**Retention Time : 9.33 min**

**Amount units :**

**Replicate unit type : Area**

**Number of levels : 7**

**Number of replicates : 1**

<b>Level</b>	<b>Amount</b>	<b>Replicate 1</b>
<b>1</b>	<b>20000.00</b>	<b>2.64002e + 006</b>
<b>2</b>	<b>10000.00</b>	<b>1.24037e + 006</b>
<b>3</b>	<b>4000.00</b>	<b>470458</b>
<b>4</b>	<b>1000.00</b>	<b>116689</b>
<b>5</b>	<b>200.00</b>	<b>33052</b>
<b>6</b>	<b>100.00</b>	<b>18008</b>

---

**DX-120 Component = Sulfate Levels Table**

**Retention Time : 11.31 min**

**Amount units :**

**Replicate unit type : Area**

**Number of levels : 7**

**Number of replicates : 1**

<b>Level</b>	<b>Amount</b>	<b>Replicate 1</b>
<b>1</b>	<b>100000.00</b>	<b>1.27619e + 007</b>
<b>2</b>	<b>50000.00</b>	<b>5.71399e + 006</b>
<b>3</b>	<b>20000.00</b>	<b>2.03254e + 006</b>
<b>4</b>	<b>5000.00</b>	<b>475030</b>
<b>5</b>	<b>1000.00</b>	<b>98133</b>
<b>6</b>	<b>500.00</b>	<b>48186</b>

---

**DX-120 Component = Nitrate/Nitrite as N Levels Table**

**Retention Time : 20.00 min**

**Amount units :**

**Replicate unit type : Area**

**Number of levels : 0**

**Number of replicates : 1**

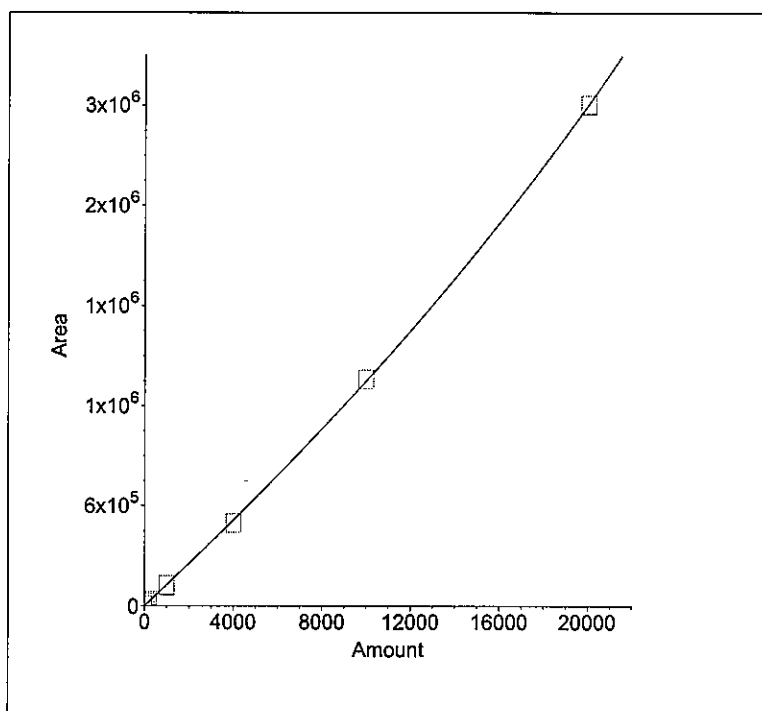
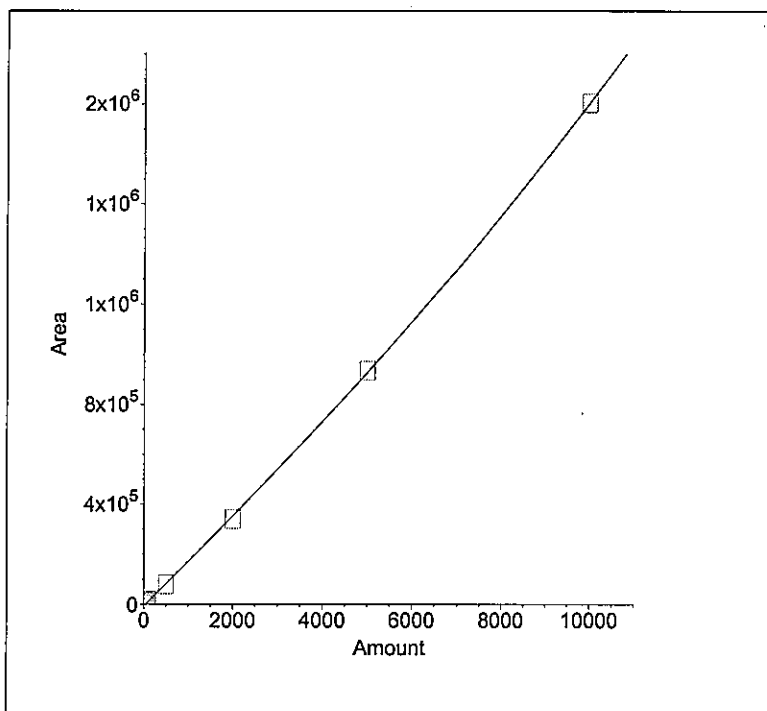
---

**DX-120 XY Data Parameters**

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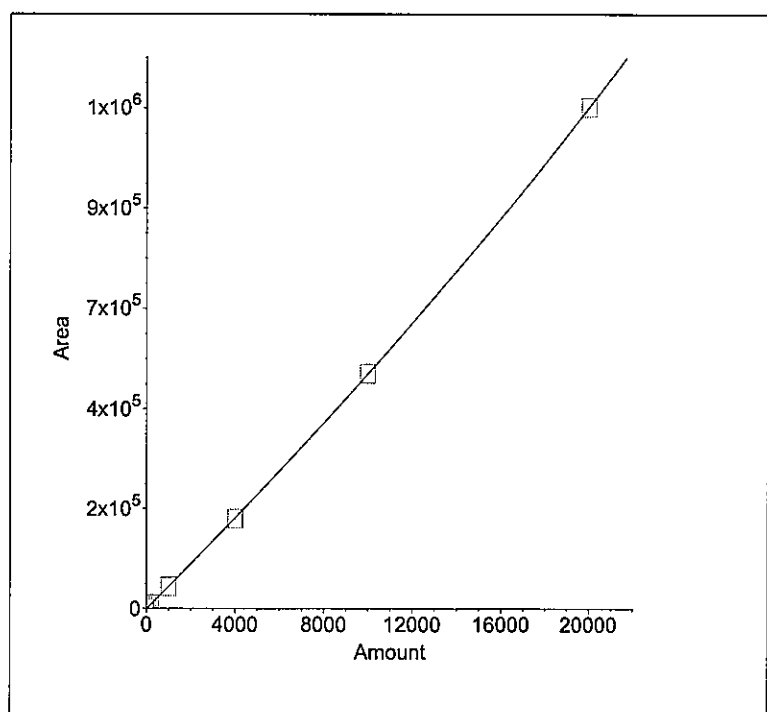
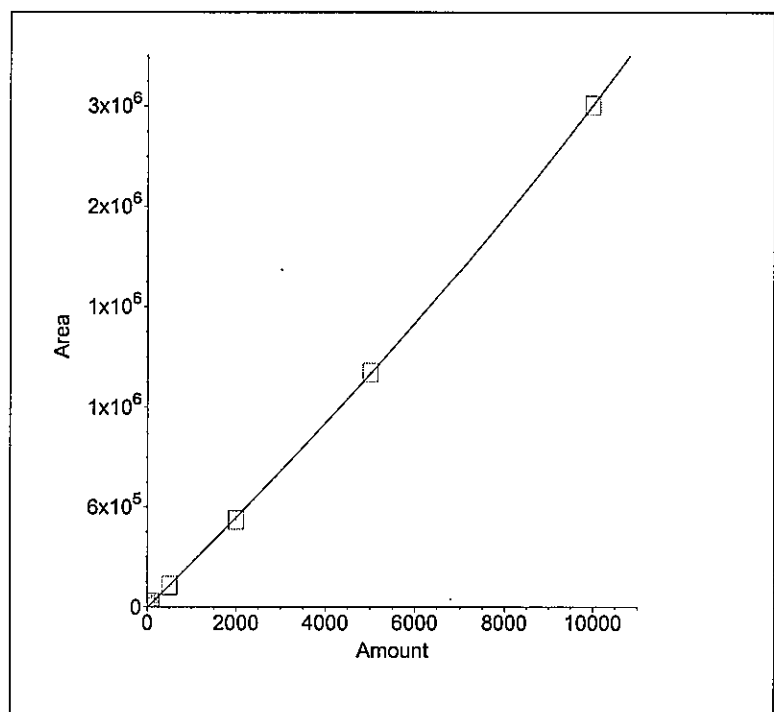
1. Component:Fluoride  
 Standard:External Fit Type:Quadratic  
 Origin:Ignore Calibration:Area  
 $r^2=0.999909$   
 $Amt=-3.489062e-010*Resp^2+$   
 $5.634467e-003*Resp+40.97$

2. Component:Chloride  
 Standard:External Fit Type:Quadratic  
 Origin:Ignore Calibration:Area  
 $r^2=0.999916$   
 $Amt=-3.821864e-010*Resp^2+$   
 $7.325591e-003*Resp+1.148$

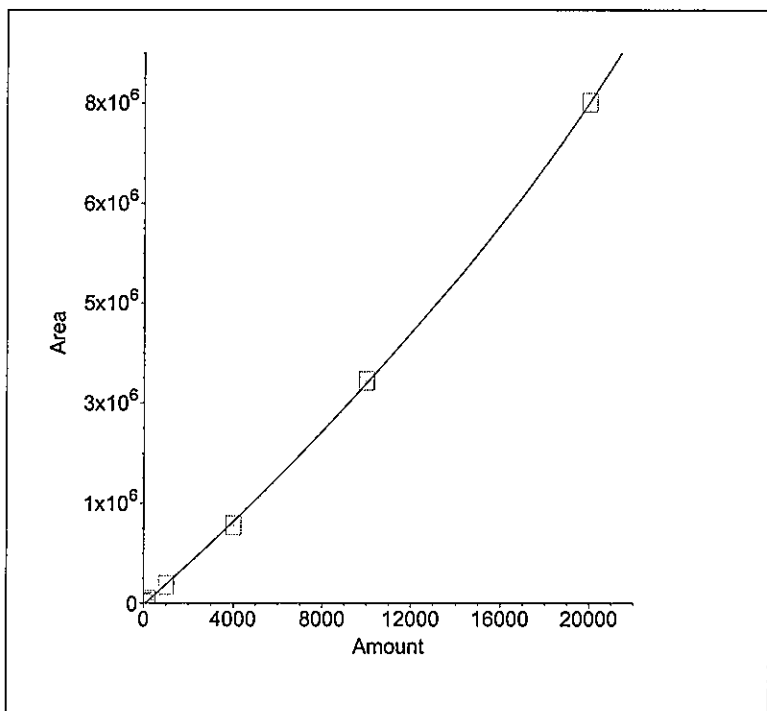


3. Component:Nitrite as N  
 Standard:External Fit Type:Quadratic  
 Origin:Ignore Calibration:Area  
 $r^2=0.999946$   
 $Amt=-1.252429e-010*Resp^2+$   
 $3.438833e-003*Resp+21.1$

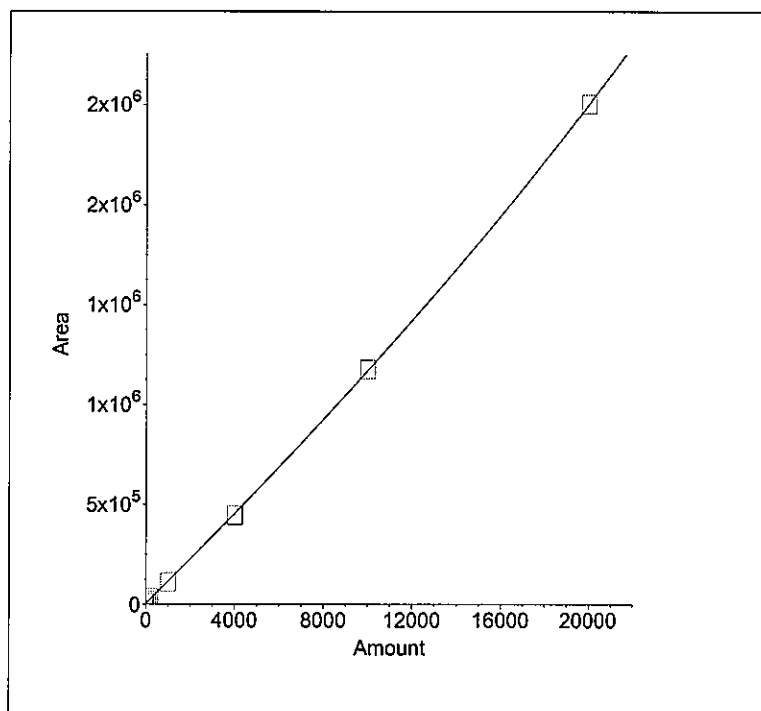
4. Component:Bromide  
 Standard:External Fit Type:Quadratic  
 Origin:Ignore Calibration:Area  
 $r^2=0.999994$   
 $Amt=-1.750315e-009*Resp^2+$   
 $1.899497e-002*Resp+29.93$



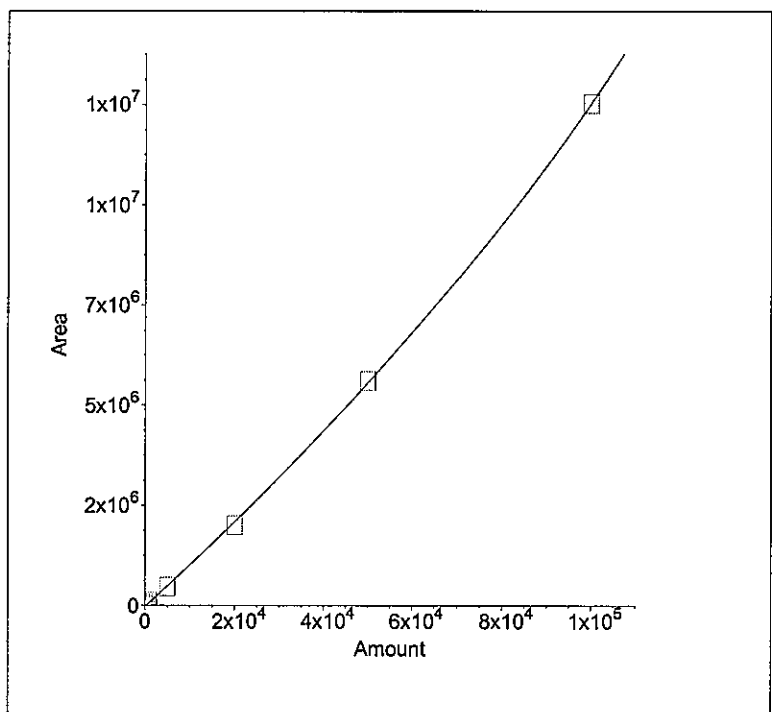
5. Component:Nitrate as N  
Standard:External Fit Type:Quadratic  
Origin:Ignore Calibration:Area  
 $r^2=0.999844$   
 $Amt=-6.639847e-011*Resp^2+$   
 $2.902123e-003*Resp+85.34$



6. Component:Orthophosphate as P  
Standard:External Fit Type:Quadratic  
Origin:Ignore Calibration:Area  
 $r^2=0.999965$   
 $Amt=-3.898562e-010*Resp^2+$   
 $8.617624e-003*Resp+-41.63$



7. Component:Sulfate  
Standard:External Fit Type:Quadratic  
Origin:Ignore Calibration:Area  
 $r^2=0.999864$   
 $Amt=-1.369369e-010*Resp^2+$   
 $9.551090e-003*Resp+343.2$



8. Component:Nitrate/Nitrite as N  
Standard:External Fit Type:Quadratic  
Origin:Ignore Calibration:Area

(No Levels Component)

## Calibration Update Report

Sample Name : 5X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_002.DXD

Method File Name : C:\PeakNet\method\130909ic1.met	System Operator : AJD
Schedule File Name : c:\peaknet\schedule\130909ic1.sch	Datafile Updated : 9/10/13 9:06:19 AM
Date Time Acquired : 9/9/13 4:55:03 PM	Method Comment : Flow rate = 1.2 mL/min,
Calibration Date : 9/10/13 9:06:02 AM	Eluent = 3...

### Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
2	Fluoride	2.80	10000	2018752
3	Chloride	3.91	20000	3294654
4	Nitrite as N	4.59	10000	3296039
5	Bromide	5.72	20000	1179304
6	Nitrate as N	6.43	20000	8516660
7	Orthophosphate as P	9.07	20000	2640021
8	Sulfate	11.16	100000	12761947
	Nitrate/Nitrite as N			



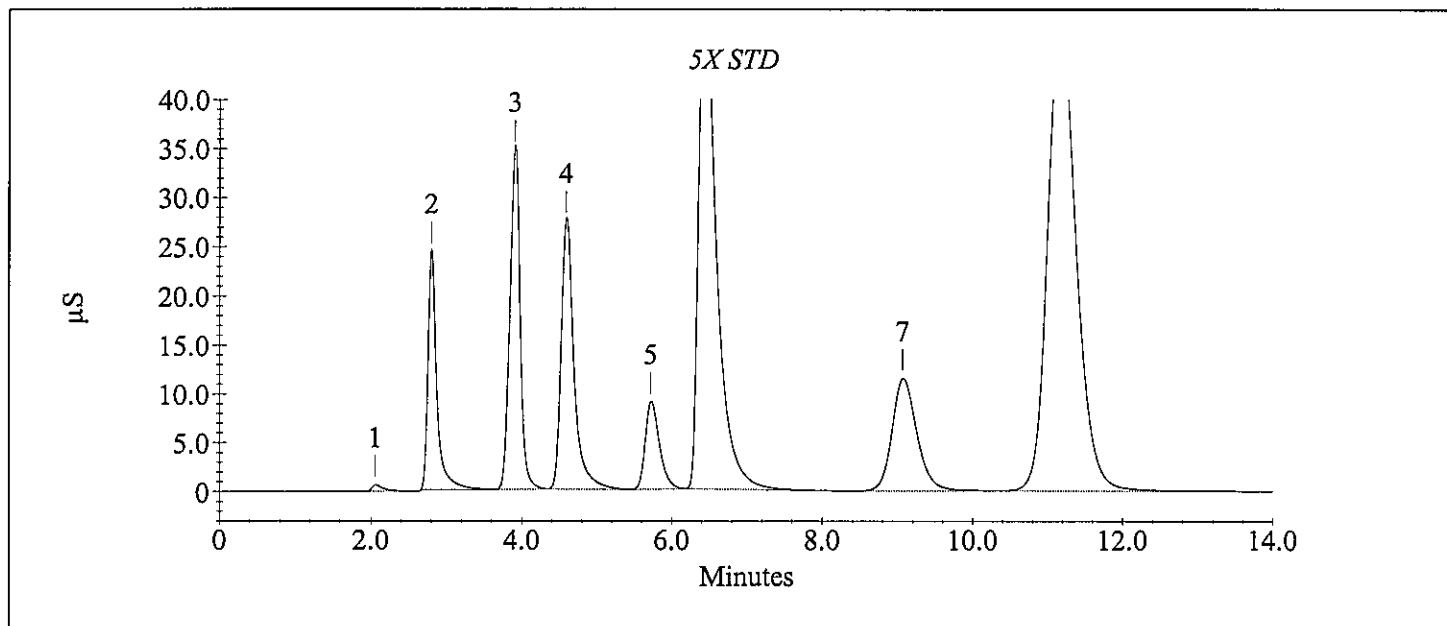
## Calibration Update Report

Sample Name : 5X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_002.DXD

Method File Name : C:\PeakNet\method\130909ic1.met  
Schedule File Name : c:\peaknet\schedule\130909ic1.sch  
Date Time Acquired : 9/9/13 4:55:03 PM  
Calibration Date : 9/10/13 9:06:02 AM

System Operator : AJD  
Datafile Updated : 9/10/13 9:06:19 AM  
Method Comment : Flow rate = 1.2 mL/min,  
Eluent = 3...



## Calibration Update Report

Sample Name : 10X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_003.DXD

Method File Name : C:\PeakNet\method\130909ic1.met	System Operator : AJD
Schedule File Name : c:\peaknet\schedule\130909ic1.sch	Datafile Updated : 9/10/13 9:08:24 AM
Date Time Acquired : 9/9/13 5:09:07 PM	Method Comment : Flow rate = 1.2 mL/min,
Calibration Date : 9/10/13 9:08:10 AM	Eluent = 3...

### Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
2	Fluoride	2.79	10000	941793
3	Chloride	3.88	20000	1491526
4	Nitrite as N	4.57	10000	1543339
5	Bromide	5.71	20000	554302
6	Nitrate as N	6.45	20000	3775252
7	Orthophosphate as P	9.11	20000	1240373
8	Sulfate	11.21	100000	5713991
	Nitrate/Nitrite as N			

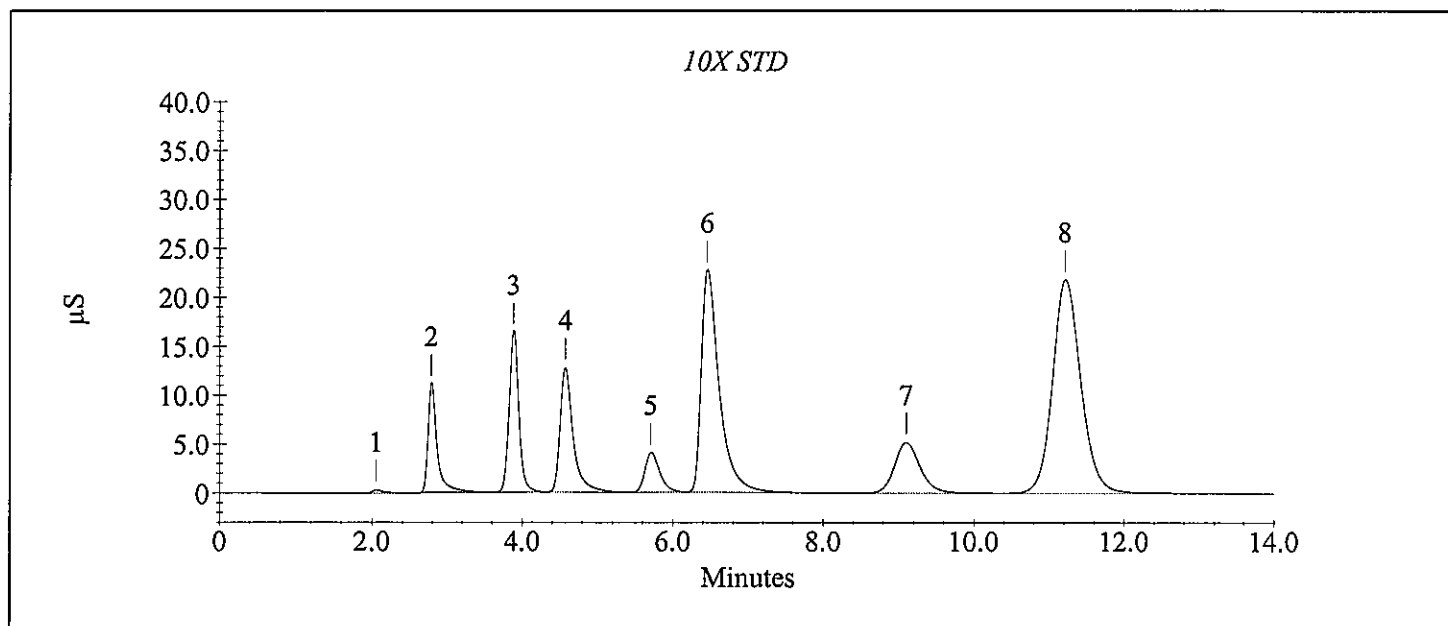
## Calibration Update Report

Sample Name : 10X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_003.DXD

Method File Name : C:\PeakNet\method\130909ic1.met  
Schedule File Name : c:\peaknet\schedule\130909ic1.sch  
Date Time Acquired : 9/9/13 5:09:07 PM  
Calibration Date : 9/10/13 9:08:10 AM

System Operator : AJD  
Datafile Updated : 9/10/13 9:08:24 AM  
Method Comment : Flow rate = 1.2 mL/min,  
Eluent = 3...



## Calibration Update Report

Sample Name : 25X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_004.DXD

Method File Name : C:\PeakNet\method\130909ic1.met	System Operator : AJD
Schedule File Name : c:\peaknet\schedule\130909ic1.sch	Datafile Updated : 9/10/13 11:49:17 AM
Date Time Acquired : 9/9/13 5:23:12 PM	Method Comment : Flow rate = 1.2 mL/min,
Calibration Date : 9/10/13 11:49:04 AM	Eluent = 3...

### Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
2	Fluoride	2.79	10000	343368
3	Chloride	3.88	20000	542675
4	Nitrite as N	4.57	10000	571885
5	Bromide	5.73	20000	211174
6	Nitrate as N	6.53	20000	1328136
7	Orthophosphate as P	9.13	20000	470458
8	Sulfate	11.25	100000	2032536
	Nitrate/Nitrite as N			

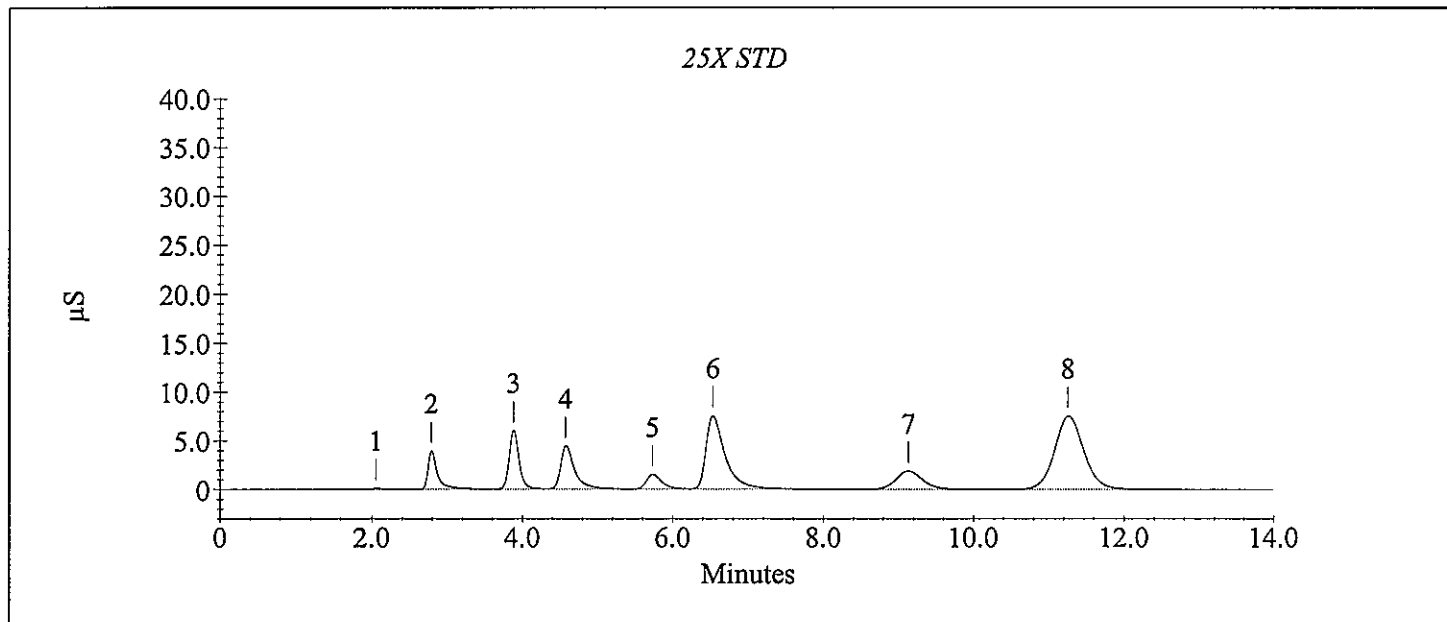
## Calibration Update Report

Sample Name : 25X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_004.DXD

Method File Name : C:\PeakNet\method\130909ic1.met  
Schedule File Name : c:\peaknet\schedule\130909ic1.sch  
Date Time Acquired : 9/9/13 5:23:12 PM  
Calibration Date : 9/10/13 11:49:04 AM

System Operator : AJD  
Datafile Updated : 9/10/13 11:49:17 AM  
Method Comment : Flow rate = 1.2 mL/min,  
Eluent = 3...



## Calibration Update Report

Sample Name : 100X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_005.DXD

Method File Name : C:\PeakNet\method\130909ic1.met	System Operator : AJD
Schedule File Name : c:\peaknet\schedule\130909ic1.sch	Datafile Updated : 9/10/13 11:53:04 AM
Date Time Acquired : 9/9/13 5:37:16 PM	Method Comment : Flow rate = 1.2 mL/min,
Calibration Date : 9/10/13 11:52:57 AM	Eluent = 3...

### Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
2	Fluoride	2.80	10000	79953
3	Chloride	3.89	20000	133814
4	Nitrite as N	4.60	10000	139857
5	Bromide	5.77	20000	51399
6	Nitrate as N	6.64	20000	309883
7	Orthophosphate as P	9.16	20000	116689
8	Sulfate	11.28	100000	475030
	Nitrate/Nitrite as N			

## Calibration Update Report

Sample Name : 100X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_005.DXD

Method File Name : C:\PeakNet\method\130909ic1.met

Schedule File Name : c:\peaknet\schedule\130909ic1.sch

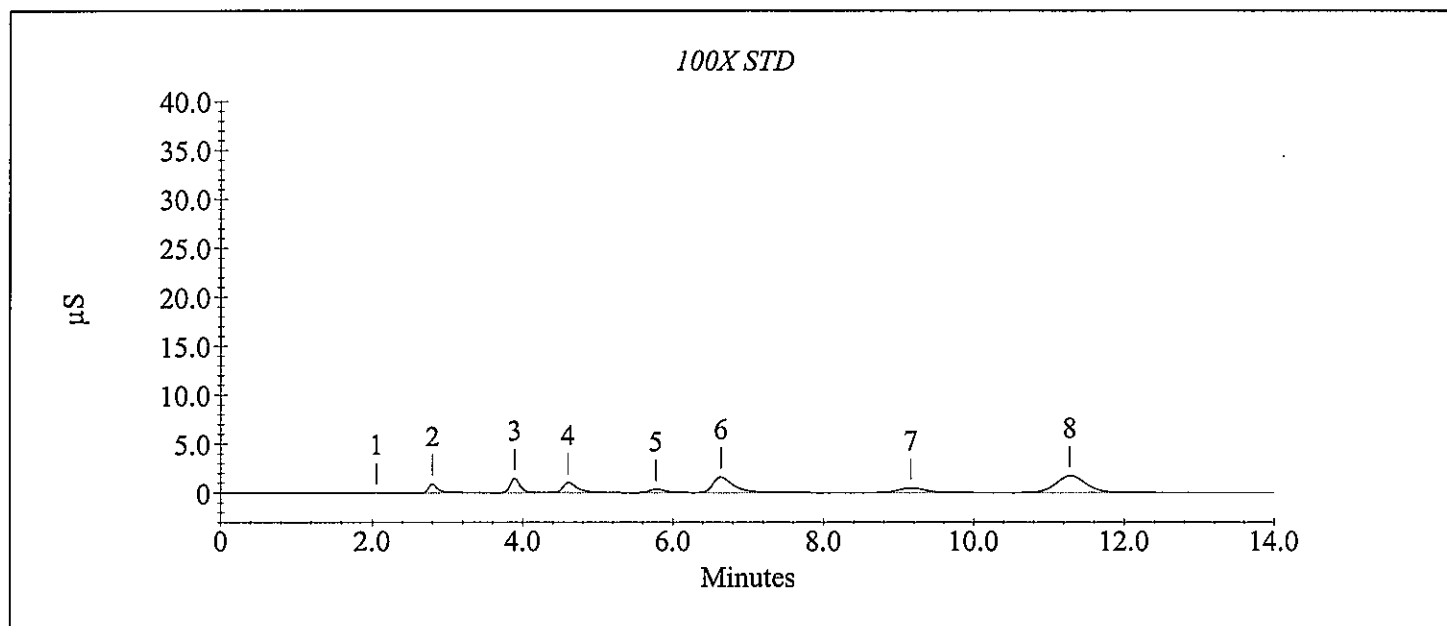
Date Time Acquired : 9/9/13 5:37:16 PM

Calibration Date : 9/10/13 11:52:57 AM

System Operator : AJD

Datafile Updated : 9/10/13 11:53:04 AM

Method Comment : Flow rate = 1.2 mL/min,  
Eluent = 3...



## Calibration Update Report

Sample Name : 500X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_006.DXD

Method File Name : C:\PeakNet\method\130909ic1.met	System Operator : AJD
Schedule File Name : c:\peaknet\schedule\130909ic1.sch	Datafile Updated : 9/10/13 11:57:24 AM
Date Time Acquired : 9/9/13 5:51:19 PM	Method Comment : Flow rate = 1.2 mL/min,
Calibration Date : 9/10/13 11:57:10 AM	Eluent = 3...

### Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
1	Fluoride	2.80	10000	12861
2	Chloride	3.89	20000	32165
3	Nitrite as N	4.61	10000	26572
4	Bromide	5.77	20000	9383
5	Nitrate as N	6.68	20000	61115
6	Orthophosphate as P	9.17	20000	33052
7	Sulfate	11.29	100000	98133
	Nitrate/Nitrite as N			



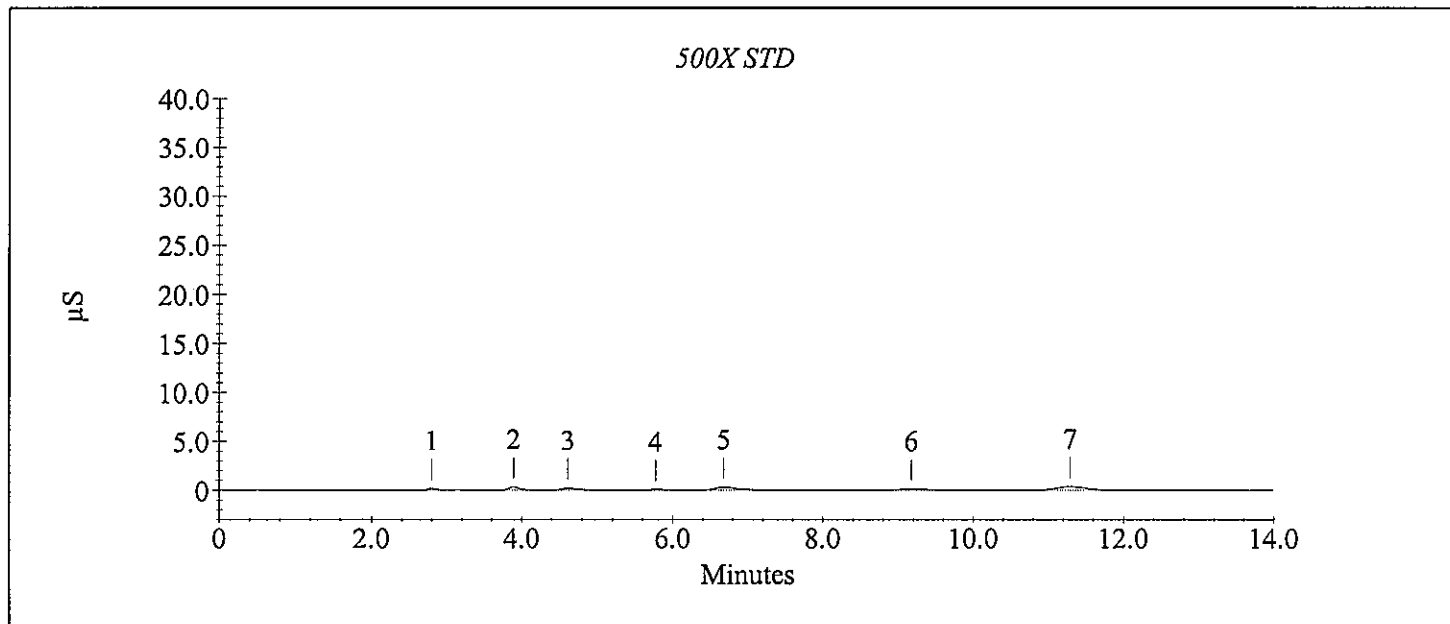
## Calibration Update Report

Sample Name : 500X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_006.DXD

Method File Name : C:\PeakNet\method\130909ic1.met  
Schedule File Name : c:\peaknet\schedule\130909ic1.sch  
Date Time Acquired : 9/9/13 5:51:19 PM  
Calibration Date : 9/10/13 11:57:10 AM

System Operator : AJD  
Datafile Updated : 9/10/13 11:57:24 AM  
Method Comment : Flow rate = 1.2 mL/min,  
Eluent = 3...



## Calibration Update Report

Sample Name : 1000X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_007.DXD

Method File Name : C:\PeakNet\method\130909ic1.met	System Operator : AJD
Schedule File Name : c:\peaknet\schedule\130909ic1.sch	Datafile Updated : 9/10/13 12:01:28 PM
Date Time Acquired : 9/9/13 6:05:23 PM	Method Comment : Flow rate = 1.2 mL/min,
Calibration Date : 9/10/13 12:01:02 PM	Eluent = 3...

### Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
1	Fluoride	2.79	10000	7149
2	Chloride	3.88	20000	18219
3	Nitrite as N	4.60	10000	13111
4	Bromide	5.76	20000	4197
5	Nitrate as N	6.67	20000	24277
6	Orthophosphate as P	9.20	20000	18008
7	Sulfate	11.31	100000	48186
	Nitrate/Nitrite as N			

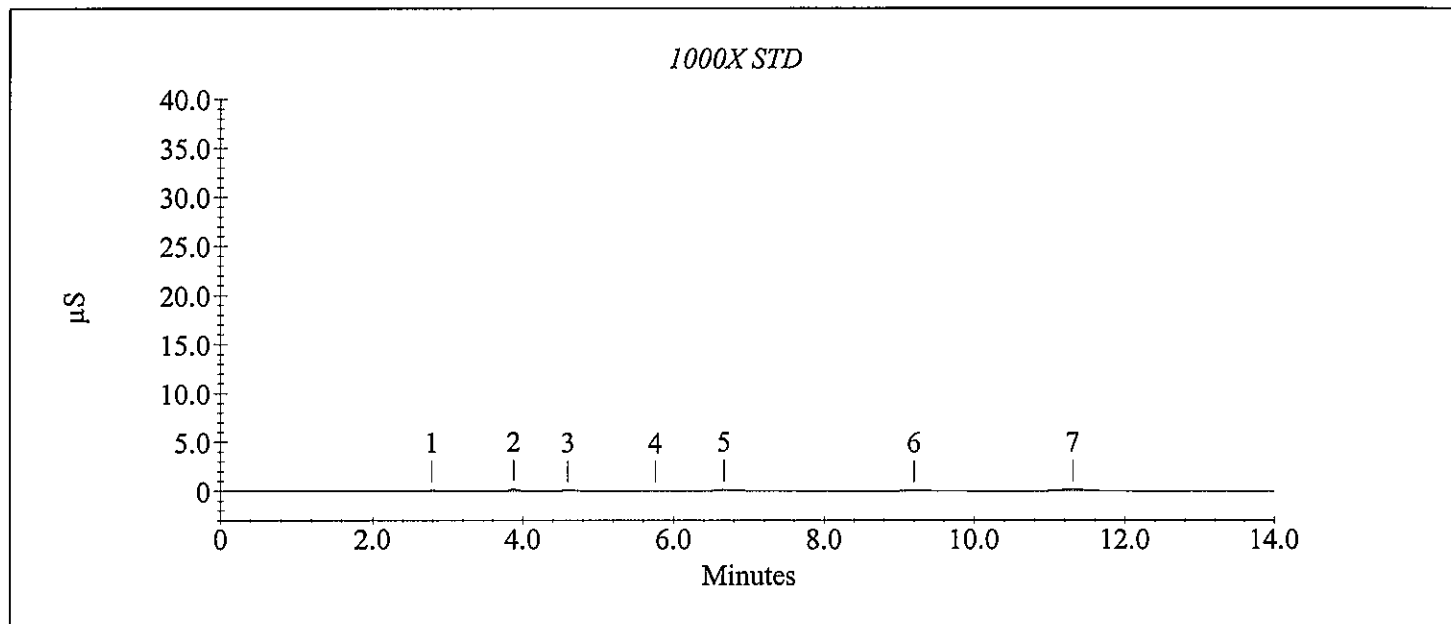
## Calibration Update Report

Sample Name : 1000X STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_007.DXD

Method File Name : C:\PeakNet\method\130909ic1.met  
Schedule File Name : c:\peaknet\schedule\130909ic1.sch  
Date Time Acquired : 9/9/13 6:05:23 PM  
Calibration Date : 9/10/13 12:01:02 PM

System Operator : AJD  
Datafile Updated : 9/10/13 12:01:28 PM  
Method Comment : Flow rate = 1.2 mL/min,  
Eluent = 3...



## Calibration Update Report

Sample Name : 0 STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_008.DXD

Method File Name : C:\PeakNet\method\130909ic1.met	System Operator : AJD
Schedule File Name : c:\peaknet\schedule\130909ic1.sch	Datafile Updated : 9/10/13 12:06:34 PM
Date Time Acquired : 9/9/13 6:19:26 PM	Method Comment : Flow rate = 1.2 mL/min,
Calibration Date : 9/10/13 12:06:14 PM	Eluent = 3...

Peak Information : All Components				
Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
1	Chloride	3.92	20000	3315
1	Chloride	3.92	20000	3315
	Nitrite as N			
	Bromide			
	Nitrate as N			
2	Orthophosphate as P	9.33	20000	7071
	Sulfate			
	Nitrate/Nitrite as N			

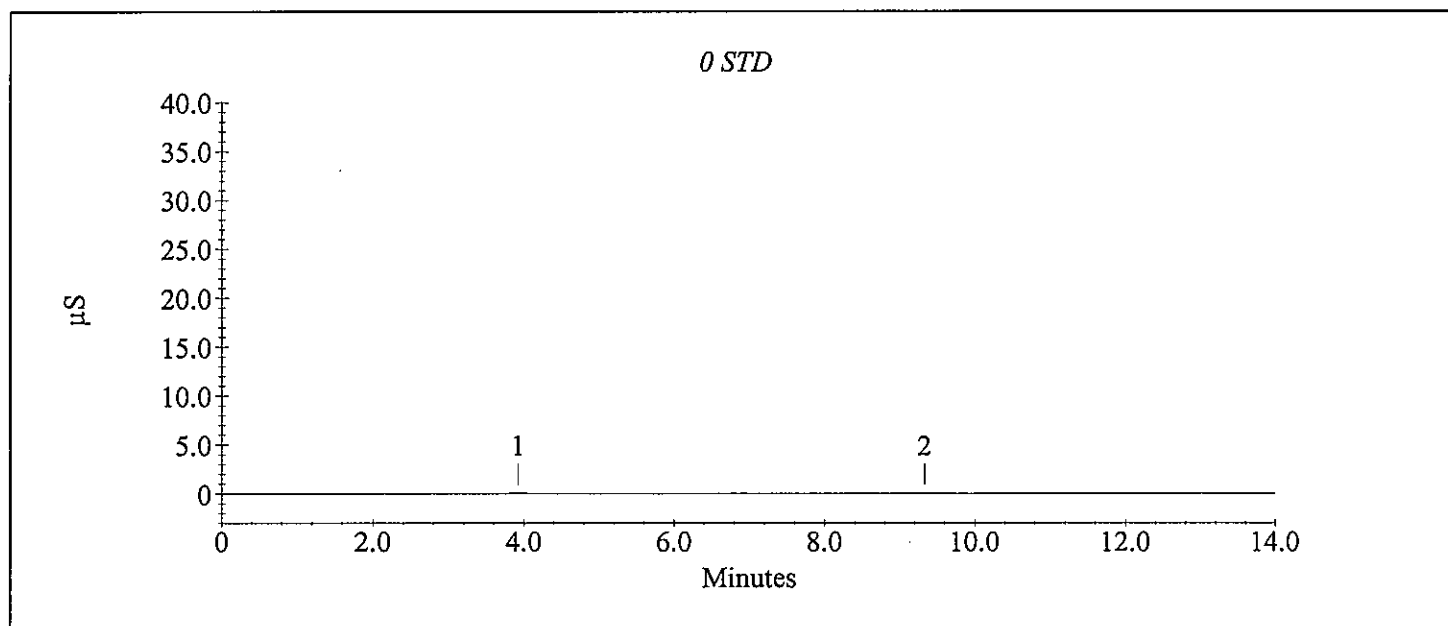
## Calibration Update Report

Sample Name : 0 STD

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_008.DXD

Method File Name : C:\PeakNet\method\130909ic1.met  
Schedule File Name : c:\peaknet\schedule\130909ic1.sch  
Date Time Acquired : 9/9/13 6:19:26 PM  
Calibration Date : 9/10/13 12:06:14 PM

System Operator : AJD  
Datafile Updated : 9/10/13 12:06:34 PM  
Method Comment : Flow rate = 1.2 mL/min,  
Eluent = 3...



# **DAILY VERIFICATION FOR ION CHROMATOGRAPH-1** (Used internally for comparative check purposes)

Analysis Date: 09/09/2013  
 Analyst Name: AJD  
 Filename for ICV: 130909ic1/130909\_009.DXD  
 Calibration Date: 09/09/2013  
 Method ID: 130909IC1.met  
 Updated Method date: NA

## **Calibration Equation Verification (ICV)**

Analyte	calibration type:	1st		2nd		A		B	
		regression coefficient	intercept	regression coefficient	intercept	conc reported by PeakNet ug/L	observed peak area	conc calc by spread-sheet ug/L	A/B *100 agreement %
Ophos	quad. ignore 0,0	-2.617353E-10	3.342	7.322904E-03		4810.6	673604	4810.6	100.0

## **Retention Time (RT) Verification**

Analyte	RT at calibration		RT in updated method (1st ICV or CCV)		deviation % (calibration vs. update) 10% tolerance	window width tolerance (NA)
	2.80	3.89	2.79	3.88		
F					0.4	5.00 %
Cl					0.3	5.00 %
NO2-N					0.7	4.90 %
Br					1.0	7.30 %
NO3-N					2.3	10.00%
PO4-P					0.4	4.10 %
SO4					0.3	4.10 %

## Sample Analysis Report

Sample Name : ICV

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_009.DXD

Method File Name : C:\PeakNet\method\130909ic1.met

Current Date : 9/10/13

Date, Time Analyzed : 9/9/13 6:33:30 PM

Current Time : 12:08:25 PM

System Operator : AJD

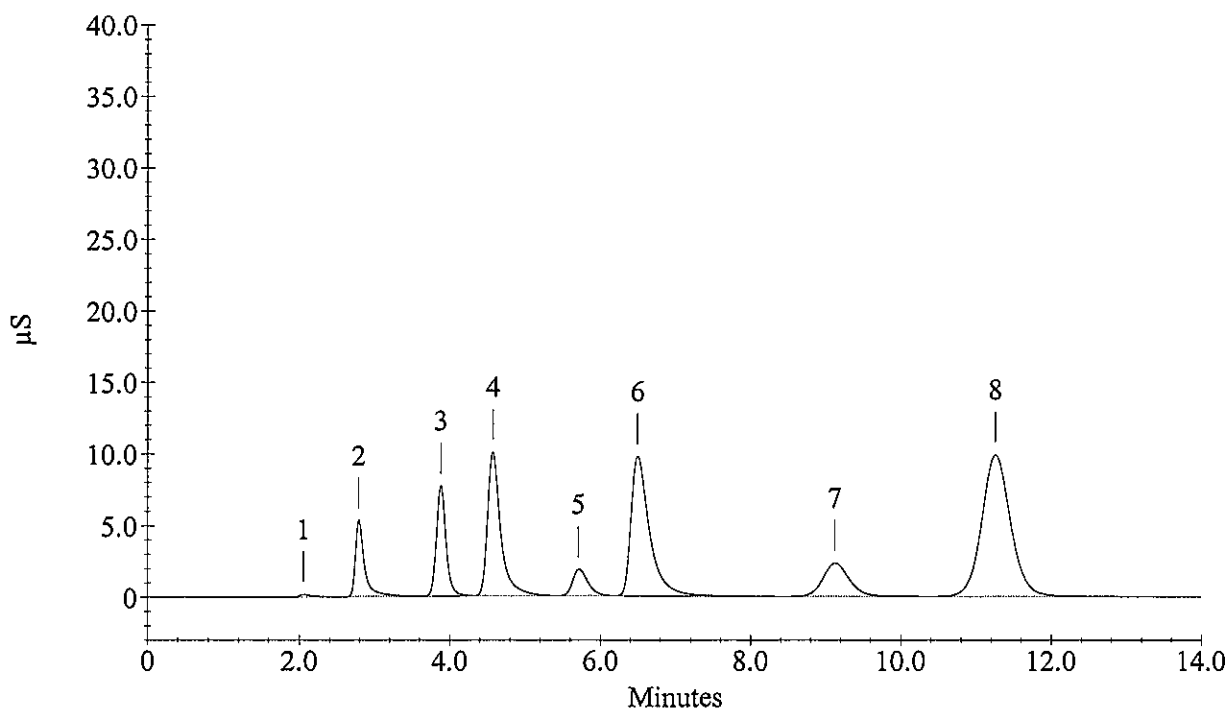
Datafile Updated : 9/10/13 12:08:19 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	2530.7		454684
3	Chloride	3.88	4862.7		688357
4	Nitrite as N	4.57	4066.5		1231630
5	Bromide	5.71	4903.7		262953
6	Nitrate as N	6.49	4780.9		1682767
7	Orthophosphate as P	9.12	4764.1		572485
8	Sulfate	11.25	24627.8		2642739
	Nitrate/Nitrite as N				

ICV



## Sample Analysis Report

Sample Name : ICB

Data File Name : C:\PEAKNET\DATA\130909IC1\130909\_010.DXD

Method File Name : C:\PeakNet\method\130909ic1.met

Current Date : 9/10/13

Date, Time Analyzed : 9/9/13 6:47:33 PM

Current Time : 12:11:29 PM

System Operator : AJD

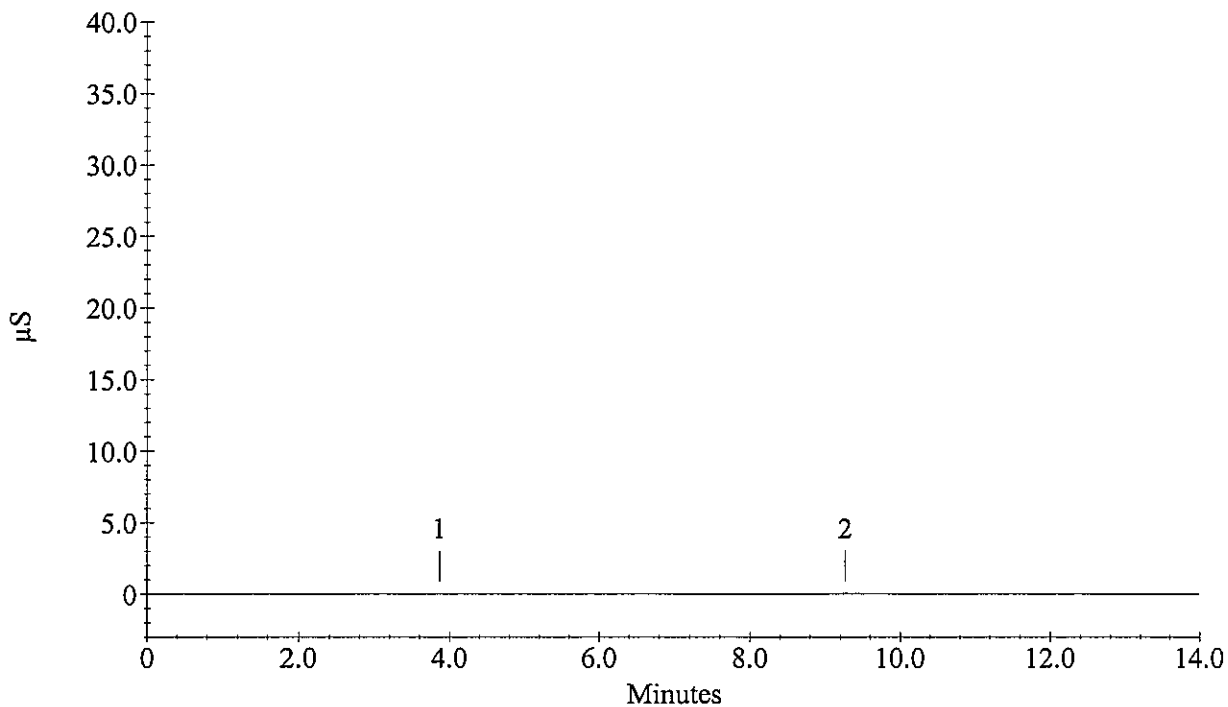
Datafile Updated : 9/10/13 12:11:27 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1	Chloride	3.87	19.4	-	2488
1	Chloride	3.87	19.4	-	2488
	Nitrite as N				
	Bromide				
	Nitrate as N				
2	Orthophosphate as P	9.27	47.2	-	10310
	Sulfate				
	Nitrate/Nitrite as N				

### ICB





# **DAILY VERIFICATION FOR ION CHROMATOGRAPH-1** (Used internally for comparative check purposes)

Analysis Date: 09/17/2013  
 Analyst Name: AJD  
 Filename for CCV: 130917ic1/130917\_011.DXD  
 Calibration Date: 09/09/2013  
 Method ID: 130909IC1.met  
 Updated Method date: NA

## **Calibration Equation Verification (ICV)**

Analyte	calibration type:	1st		2nd		A		B	
		regression coefficient	intercept	regression coefficient	intercept	conc reported by PeakNet ug/L	observed peak area	conc calc by spread-sheet ug/L	A/B *100 agreement %
Ophos	quad. ignore 0.0	-2.617353E-10	3.342	7.322904E-03		4810.6	673604	4810.6	100.0

## **Retention Time (RT) Verification**

Analyte	RT at calibration	RT in updated method (1st ICV or CCV)	deviation % (calibration vs. update) 10% tolerance	window width tolerance (NA)
F	2.80	2.79	0.4	5.00 %
Cl	3.89	3.87	0.5	5.00 %
NO2-N	4.60	4.55	1.1	4.90 %
Br	5.77	5.68	1.6	7.30 %
NO3-N	6.64	6.41	3.5	10.00%
PO4-P	9.16	9.08	0.9	4.10 %
SO4	11.28	11.17	1.0	4.10 %

## Sample Analysis Report

Sample Name : CCV

Data File Name : c:\peaknet\data\130917ic1\130917\_011.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 11:53:30 AM

Current Time : 12:07:32 PM

System Operator : AJD

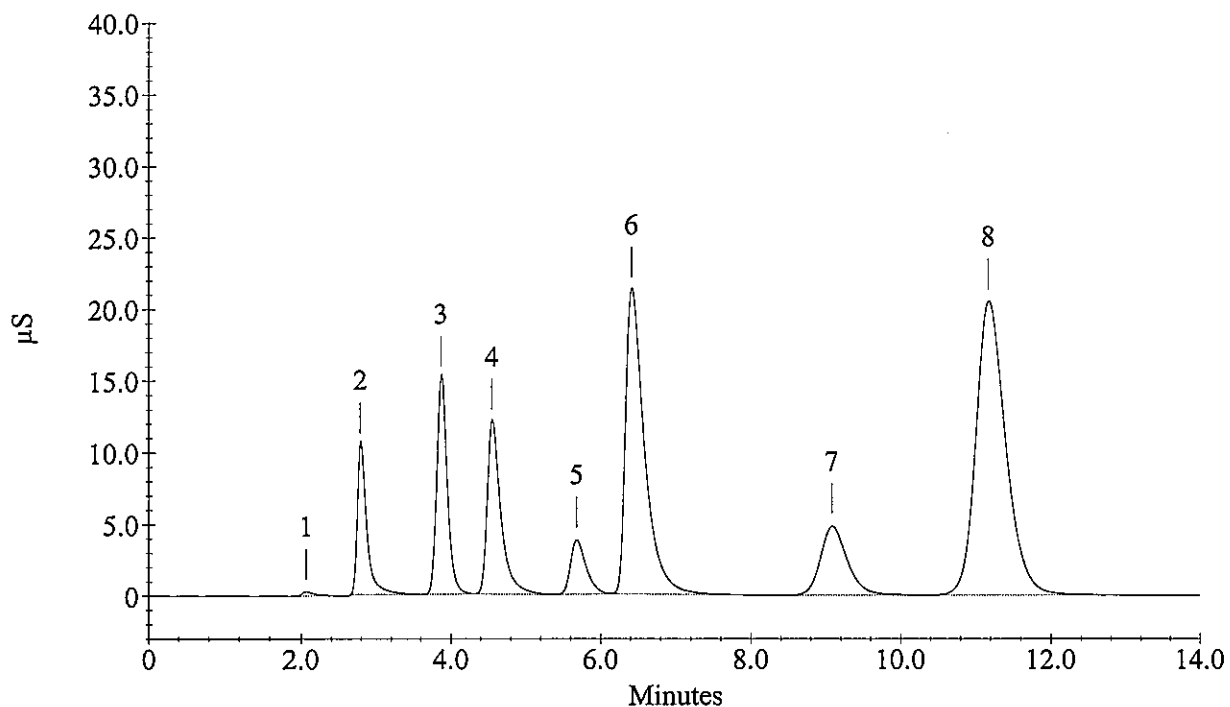
Datafile Updated : 9/17/13 12:07:32 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	4985.5 ✓		931255
3	Chloride	3.87	9954.1 ✓		1471637
4	Nitrite as N	4.55	5049.0 ✓		1549548
5	Bromide	5.68	9929.6 ✓		548940
6	Nitrate as N	6.41	9996.7 ✓		3734273
7	Orthophosphate as P	9.08	9774.8 ✓		1204780
8	Sulfate	11.17	49951.4 ✓		5651992
	Nitrate/Nitrite as N				

CCV



## Sample Analysis Report

**Sample Name : CCB**

**Data File Name : c:\peaknet\data\130917ic1\130917\_012.DXD**

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 12:07:34 PM

Current Time : 12:21:36 PM

System Operator : AJD

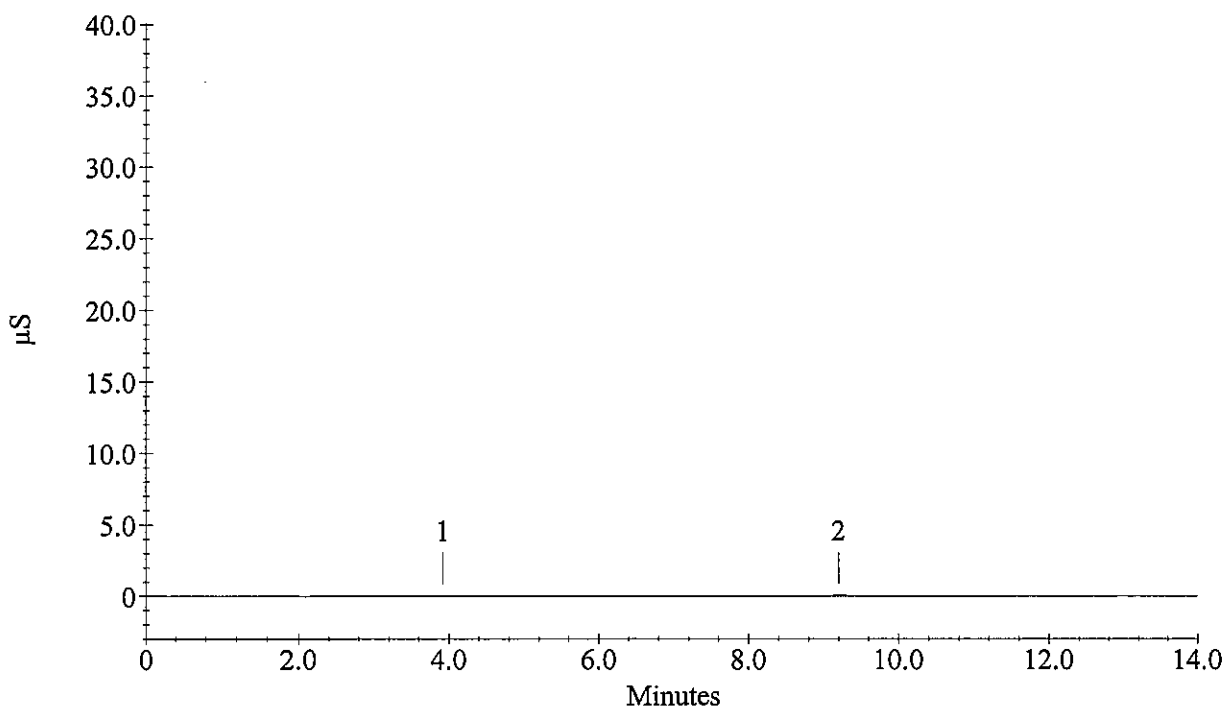
Datafile Updated : 9/17/13 12:21:35 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1	Chloride	3.92	9.4	-	1130
1	Chloride	3.92	9.4	-	1130
	Nitrite as N				
	Bromide				
	Nitrate as N				
2	Orthophosphate as P	9.20	93.6	-	15706
	Sulfate				
	Nitrate/Nitrite as N				

### CCB



## Sample Analysis Report

Sample Name : IC130917-1LCS

Data File Name : c:\peaknet\data\130917ic1\130917\_013.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 12:21:38 PM

Current Time : 12:35:39 PM

System Operator : AJD

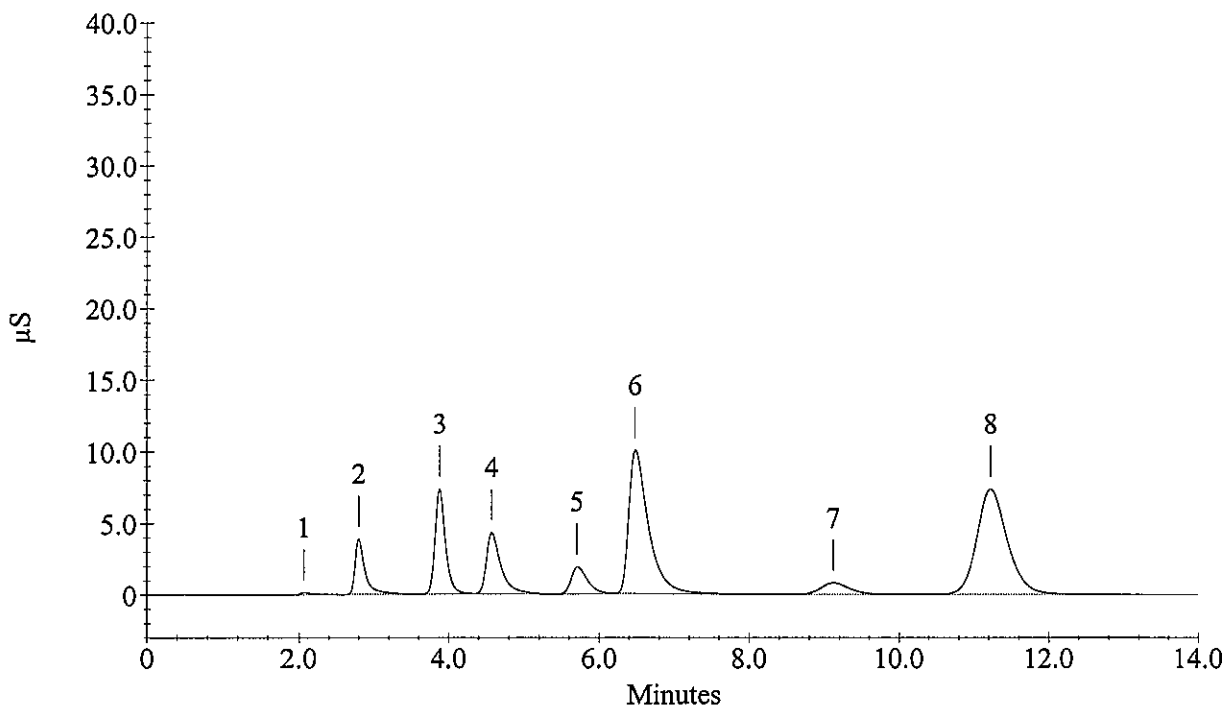
Datafile Updated : 9/17/13 12:35:39 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.80	1994.1✓		354427
3	Chloride	3.88	5006.6✓		709546
4	Nitrite as N	4.57	1958.2✓		575358
5	Bromide	5.71	5288.8✓		284305
6	Nitrate as N	6.48	5169.8✓		1828477
7	Orthophosphate as P	9.12	1747.2		209566
8	Sulfate	11.23	19637.0✓		2082234
	Nitrate/Nitrite as N				

### IC130917-1LCS



## Sample Analysis Report

Sample Name : IC130917-1MB

Data File Name : c:\peaknet\data\130917ic1\130917\_014.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 12:35:41 PM

Current Time : 12:49:43 PM

System Operator : AJD

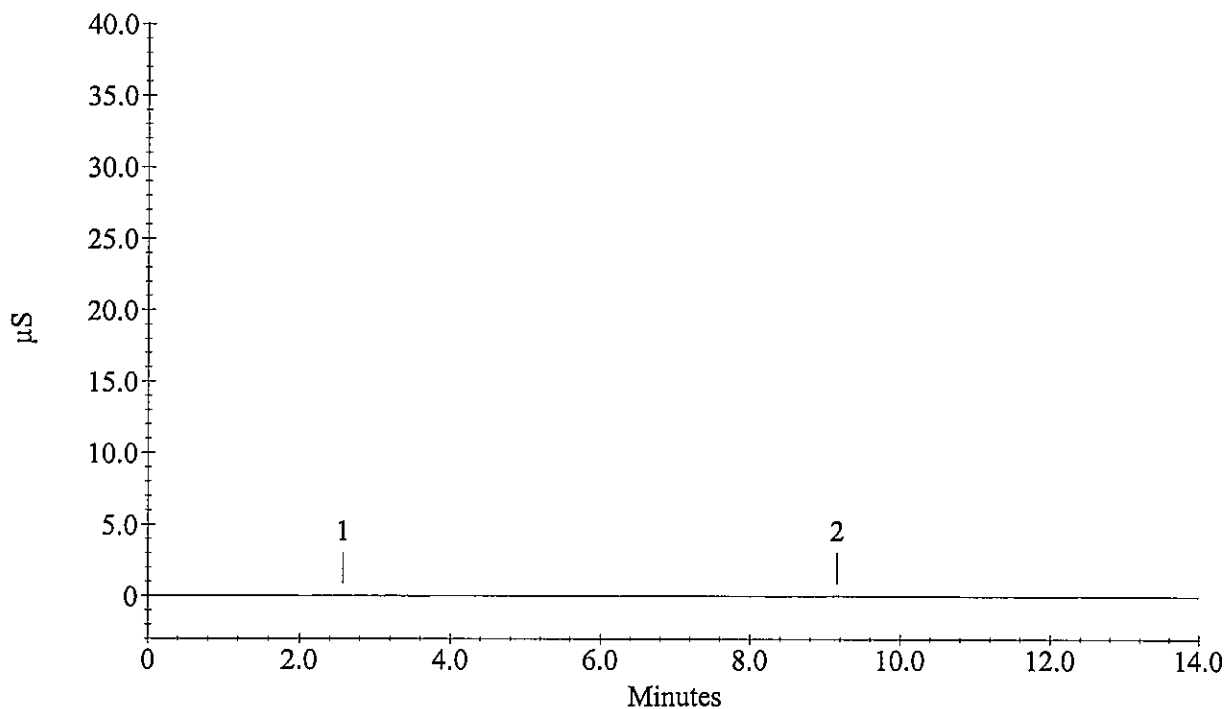
Datafile Updated : 9/17/13 12:49:42 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1	Chloride Nitrite as N Bromide Nitrate as N	2.57	0.0		672
2	Orthophosphate as P Sulfate Nitrate/Nitrite as N	9.16	8.7	-	5846

### IC130917-1MB



## Sample Analysis Report

Sample Name : CCV

Data File Name : c:\peaknet\data\130917ic1\130917\_023.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 2:42:13 PM

Current Time : 2:56:14 PM

System Operator : AJD

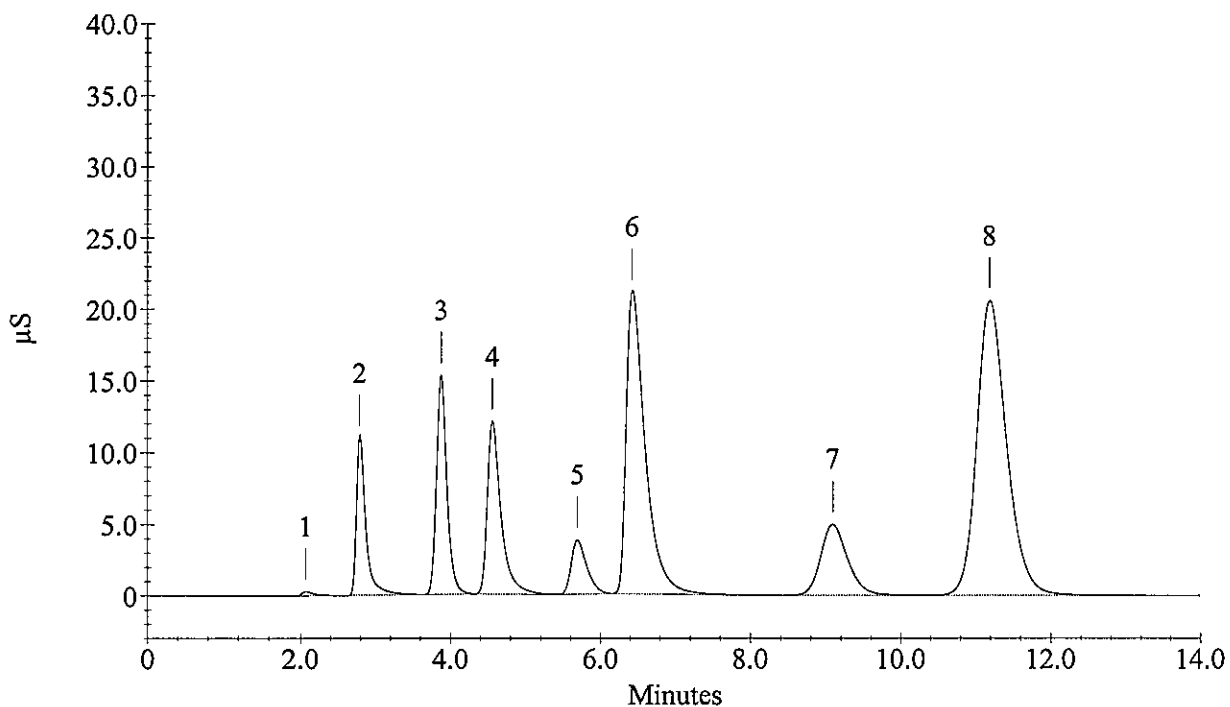
Datafile Updated : 9/17/13 2:56:14 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	5161.8 ✓		966701
3	Chloride	3.88	9928.0 ✓		1467439
4	Nitrite as N	4.56	5010.4 ✓		1536901
5	Bromide	5.69	9915.3 ✓		548101
6	Nitrate as N	6.43	9986.3 ✓		3729924
7	Orthophosphate as P	9.09	10074.3 ✓		1243858
8	Sulfate	11.19	50013.3 ✓		5659727
	Nitrate/Nitrite as N				

CCV



## Sample Analysis Report

Sample Name : CCB

Data File Name : c:\peaknet\data\130917ic1\130917\_024.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 2:56:16 PM

Current Time : 3:10:18 PM

System Operator : AJD

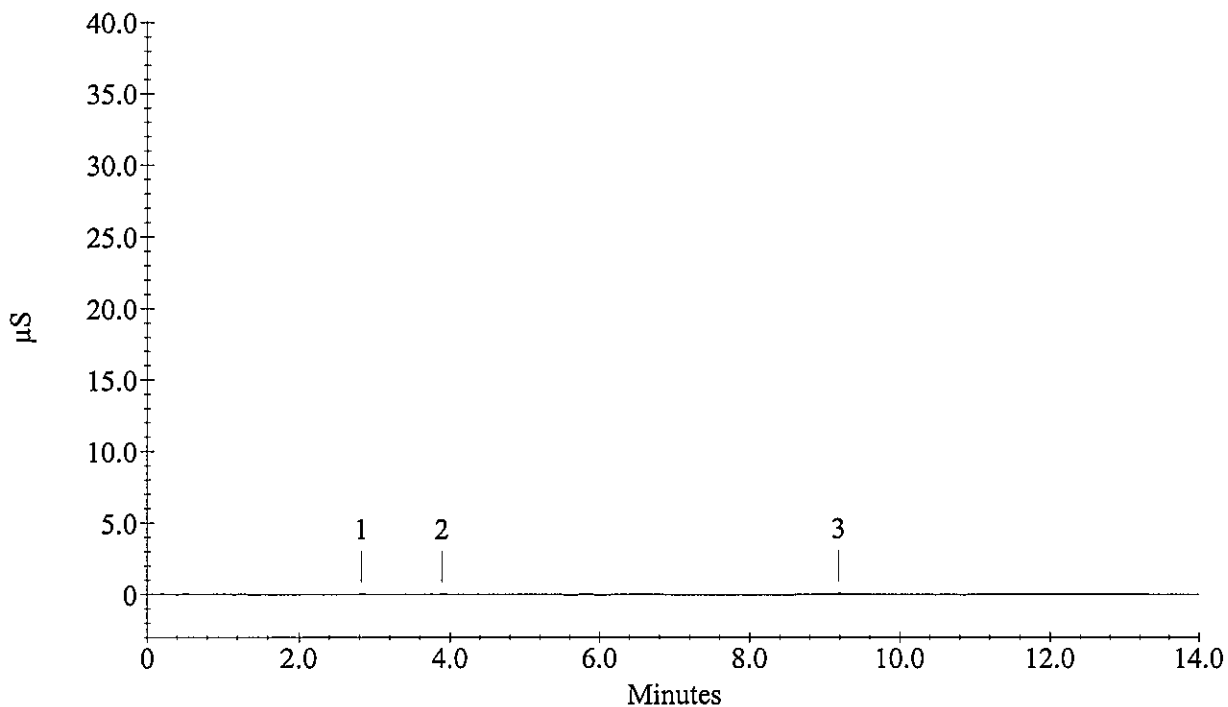
Datafile Updated : 9/17/13 3:10:17 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1		2.83	0.0		546
2	Chloride	3.89	10.8	-	1316
	Nitrite as N				
	Bromide				
	Nitrate as N				
3	Orthophosphate as P	9.19	163.5	-	23825
	Sulfate				
	Nitrate/Nitrite as N				

CCB



## Sample Analysis Report

Sample Name : 1309217-2

Data File Name : c:\peaknet\data\130917ic1\130917\_033.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 5:02:49 PM

Current Time : 5:16:51 PM

System Operator : AJD

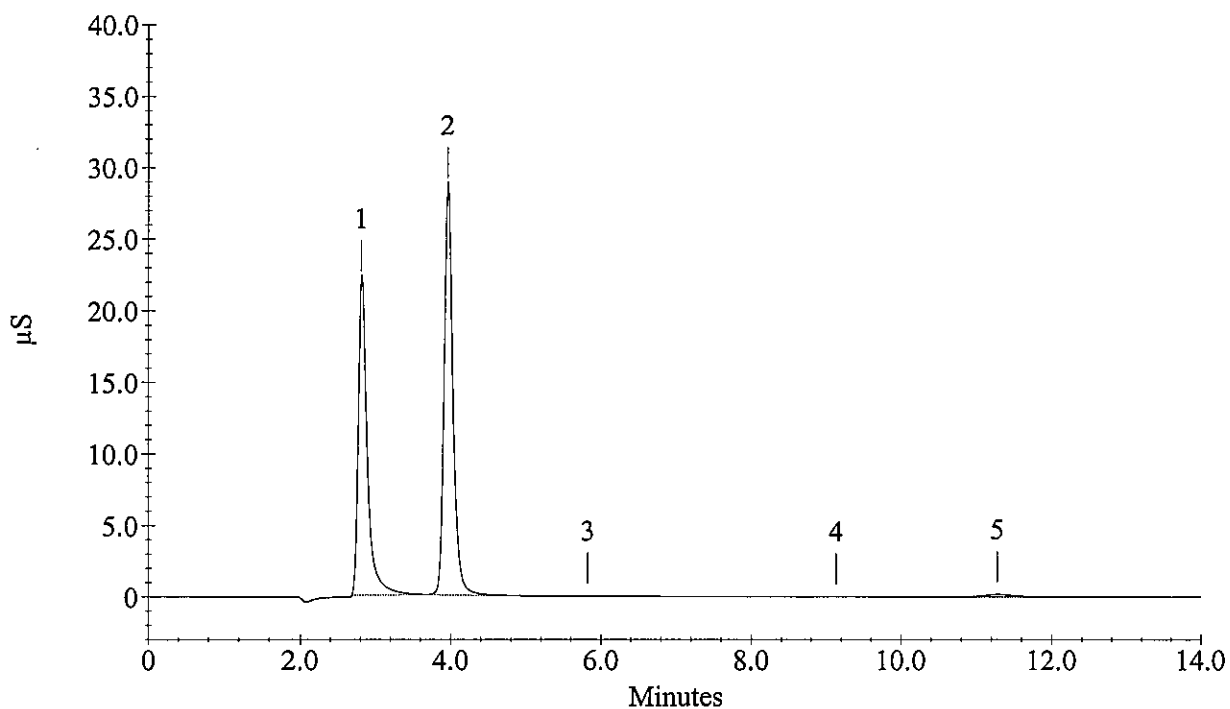
Datafile Updated : 9/17/13 5:16:50 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1	Fluoride	2.81	9303.0		1857469
2	Chloride	3.96	14946.9		2321338
	Nitrite as N				
3	Bromide	5.83	152.7	-	6465
	Nitrate as N				
4	Orthophosphate as P	9.13	-26.6	-	1746
5	Sulfate	11.28	809.6		48875
	Nitrate/Nitrite as N				

1309217-2





## Sample Analysis Report

Sample Name : CCV

Data File Name : c:\peaknet\data\130917ic1\130917\_035.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 5:30:56 PM

Current Time : 5:44:58 PM

System Operator : AJD

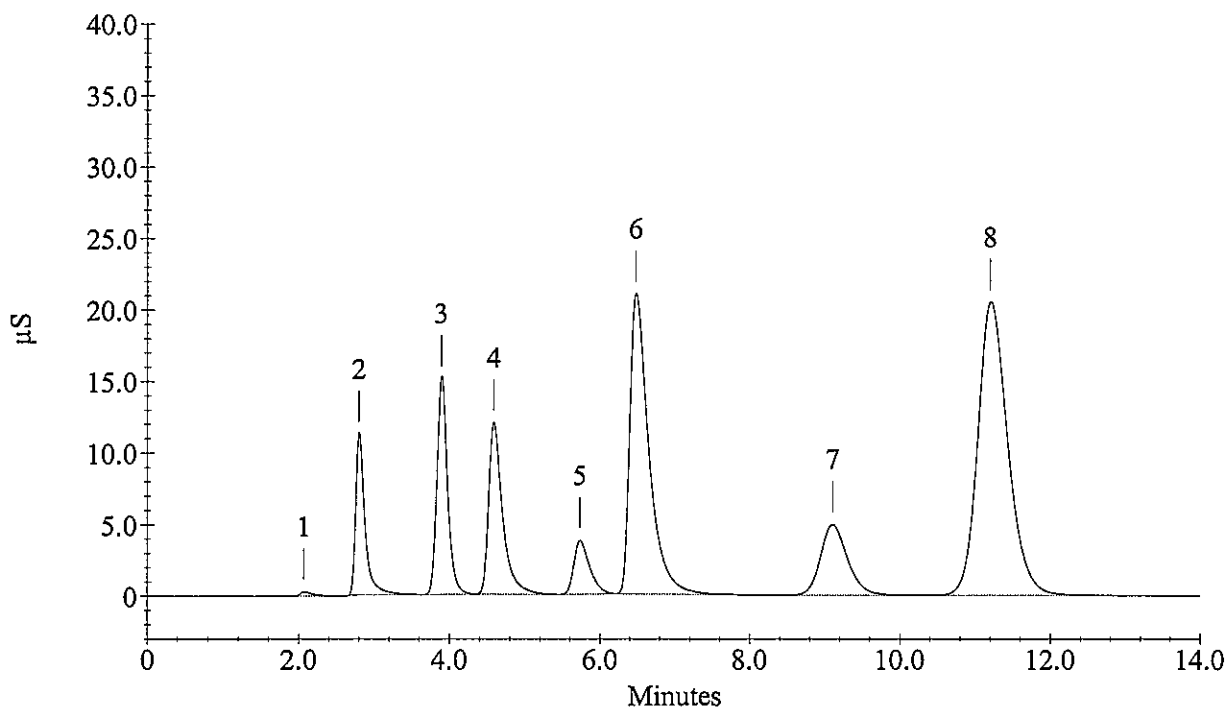
Datafile Updated : 9/17/13 5:44:57 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.80	5195.7 ✓		973556
3	Chloride	3.89	9943.2 ✓		1469882
4	Nitrite as N	4.59	5018.3 ✓		1539481
5	Bromide	5.73	9935.8 ✓		549305
6	Nitrate as N	6.48	9976.8 ✓		3725967
7	Orthophosphate as P	9.11	10022.4 ✓		1237069
8	Sulfate	11.20	50066.6 ✓		5666390
	Nitrate/Nitrite as N				

CCV



## Sample Analysis Report

Sample Name : CCB

Data File Name : c:\peaknet\data\130917ic1\130917\_036.DXD

Method File Name : c:\peaknet\method\130909ic1.met

Current Date : 9/17/13

Date, Time Analyzed : 9/17/13 5:45:00 PM

Current Time : 5:59:01 PM

System Operator : AJD

Datafile Updated : 9/17/13 5:59:01 PM

Calibration Updated : 9/10/13 12:06:14 PM

### Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1		2.36	0.0		137
3	Chloride	3.89	12.3	-	1523
	Nitrite as N				
	Bromide				
	Nitrate as N				
4	Orthophosphate as P	9.21	152.6	-	22564
	Sulfate				
	Nitrate/Nitrite as N				

CCB

